



Title : Twitter as a Communications Instrument to
Support the Decision Making Process in UAE police

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Twitter as a Communications Instrument to Support
the Decision Making Process in UAE police

By

Mansour Alkhyeli

A thesis submitted to the University of Bedfordshire in partial fulfilment
of the requirements for the degree of Doctor of Philosophy

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Declaration

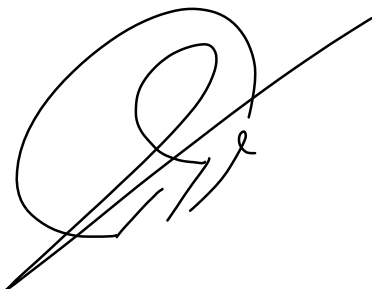
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Twitter as a Communications Instrument to Support the Decision Making Process in UAE police

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Abstract

Social media are increasingly becoming platforms of choice for communication among individuals and groups of the public, and hence organisations are interested in engaging with communities and the public through this form of media to gain intelligence from such engagements to support their decision making processes. Yet, organisations are missing on realising the potential value from using social media for this type of interaction and engagement, while paucity in research addressing practical ways to use social media communication in supporting decision making still persists. This research investigates and proposes a practical framework for using social media – specifically Twitter – as a communications instrument to support the decision making process in police organisations.

The research design is based on developing and evaluating a proof of concept representing engagements between the United Arab Emirates (UAE) police as a case study of police organisations with communities and members of the public in the UAE. The proof of concept is designed based on comparing and contrasting current practices by the UAE police with models, trends, and practices discussed in related literature. The research uses the Grounded Theory methodology to guide sampling, data collection, and analysis.

The contribution of the research is to both theory and practice. The research addresses a gap in the body of knowledge for a framework that guides the development of models, policies, and practices for the use of social media as a communication instrument to support decision making in governmental organisations, specifically the police. In addition, the framework offers practical insights to policy makers into using different social media to engage with the public in communication, interactions, and knowledge sharing, with the aim of supporting decision making.

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Chapter I – Introduction

The use of information and communication technologies to support decision making processes in organisations is increasingly gaining importance in research and in practice, especially with increasing complexity in organisational work environments. One of the recently growing applications for information and communication technologies is using social media as communication instruments to support decision making processes in organisations, particularly as social media are becoming platforms of choice for communication between organisations and members of the public. This research explores the use of social media, specifically Twitter, as a communication instrument in supporting decision making processes in police organisations focusing on the UAE police.

The purpose of this chapter is to provide an introduction to the research. The chapter starts by describing the organisational context, in which police organisations in general, and the UAE police in particular, are working. It then defines the research problem that this thesis addresses and identifies the research question underpinning the investigation. In light of the research question, the aim of the research is identified along with the research objectives that the investigation is planned to achieve. The research strategy is defined in addition to the

research design and selection of the research methodology. Following this, the chapter provides a brief description of the anticipated value from the research investigation to both practice and body of knowledge, defines the boundaries of the research, and identifies the limitations of the research. Finally, the contents of each of the chapters that constitute the thesis are highlighted.

1.1 Research Context

Police organisations, like other organisations, have been increasingly using information and communication technologies to support their decision making processes. Observations through professional practice, however, have shown that a gap has been increasingly widening between the police and communities and members of the public and, in spite of the continuous efforts from police organisations to communicate more effectively, and using more communication channels. This research investigation is particularly concerned with the use of social media as an instrument not only to communicate with communities and members of the public, but equally importantly to engage the public and the communities in conversations in support of more effective decision making.

1.2 Problem Definition

The use of innovative information and communication technologies solutions to support decision making processes is increasingly gaining importance in research and in practice, particularly with increasing complexity in organisational work environments, which is manifested in continuous change of work environments and a growing uncertainty and unpredictability in everyday activities and interactions with communities and members of the public (Wen *et al.*, 2008). One of the recently growing applications for information and communication technologies is the use of social media as a communication instrument to support decision making processes in organisations, especially as social media are gradually becoming platforms of choice for communication between organisations and the public (Pak & Paroubek, 2010; Deneff *et al.*, 2011; Van den Born *et al.*, 2013; Meijer & Torenvlied, 2014). Yet, the question arises as to how effective is using social media as communication instruments deployed by organisations in supporting their decision making processes.

Police organisations have been facing growing challenges, especially in the last few years in relation to the effectiveness of their decision making processes. These growing challenges appear to be contributed to two main areas of challenge. The first area is the frequent changes in the work environment in which police organisations are operating, which is manifested for example in constantly changing types

of threat they are facing, and hence the tasks they should manage (Carlsson & El Sawy, 2008; Van den Born *et al.*, 2013; Yilmaz, 2013; Meijer & Torenvlied, 2014). New types of crime have appeared such as terrorism (Jonathan-Zamir *et al.*, 2014; Dixon & Williams, 2015) and cybercrime (Yar, 2013; Armin *et al.*, 2015). The second area of challenge is the dynamic transformation in the social context that characterises communities that police organisations are interacting with, i.e. the communities and members of the public (Denef *et al.*, 2011; Van den Born *et al.*, 2013; Yilmaz, 2013). For example, people are ever more inclined to use new types of communication channels in exchanging information, views, and opinions.

Organisations have been using social media as communication instruments to engage with people in conversations and interactions, towards better understanding of their customers or clients, and hence adapting to the continual changes in their work environments and the dynamic transformations in the social contexts they are operating in (Burstein & Holsapple, 2008a; Alencar *et al.*, 2010; Antunes & Costa, 2012). This is also important for police organisations, especially with the increasing variation of sources of information, views and opinions and a broadening participation from an increasingly aware and technology savvy public and communities through social media in the last few years. For example, millions of bloggers and micro-bloggers (e.g. Twitter) are sharing their opinions everyday on different aspects of life (Pak & Paroubek, 2010).

Accordingly, social media represent rich sources of information, knowledge, and intelligence available for instance through micro-blogging sites such as Twitter (Pak & Paroubek, 2010; Meijer & Torenvlied, 2014). Yet, a lack of insights into the practice of using social media as communication instruments for supporting decision making still persists. Frameworks implemented by police organisations for using social media in communication and decision making continue to be lagging vis-à-vis the frequent changes in their environments and transformations in communities they are interacting with (Ratcliffe, 2010), while a paucity in research into the use of social media as a communication instrument in supporting decision making processes continue to be the case (Pak & Paroubek, 2010).

Following from the above discussion on the research problem, the research question can be defined as follows:

What practical framework that can be used for using social media as a communication instrument in support of decision making processes in police organisations?

A practical framework, in the context of this research, refers to essential logical components and propositions that constitute the structure and practices for designing, developing and evaluating organisational models for using social media as a communication instrument in supporting decision making processes in police organisations.

1.3 Research Aim and Objectives

Following from the above definition of the research problem, the purpose of this research is to identify a framework from practice, for using social media to engage communities and members of the public in communication towards supporting more effective decision making in police organisations, with a focus on the UAE police as a case study. Therefore, the research aims at developing and evaluating a proof of concept for an improved framework (i.e. logical components and propositions that constitute the structure and practices) for using social media as a communication instrument for supporting decision making processes in police organisations. The proof of concept is based on comparing and contrasting the current framework (i.e. logical components and propositions that constitute the structure and practices currently in use by the UAE police) with an improved framework using trends and practices for using social media as a communication instrument for supporting decision making processes in different police organisations worldwide identified in the literature.

The main research objectives are identified in the following:

1. To assess the current framework implemented at the UAE police for using social media as a communication instrument in supporting decision making processes.
2. To develop a proof of concept based on a comparison of the current framework and models, trends, and practices in the literature.

3. To evaluate the proof of concept for using social media as a communication instrument in supporting decision making processes.

The above research objectives are divided into the following sub-objectives:

1. To assess models, trends, and practices in the literature on the use of social media as a communication instrument in supporting decision making processes.
2. To compare and contrast the current framework implemented by the UAE police with the models, trends, and practices identified in the literature.
3. To build a proof of concept using based on one type of social media as a communication instrument in supporting decision making processes.
4. To populate the proof of concept with topics of interest to diversified communities and members of the public in different emirates in the UAE.
5. To assess the views and experiences of the communities and members of the public on the proof of concept.
6. To propose and develop a framework (logical components and propositions) for the use of social media as a communication instrument in supporting decision making in police organisations from concepts emerging from the evaluation of the proof of concept.

1.4 Research Design

The research strategy is founded on uncovering theory from practice through designing, implementing and evaluating a proof of concept for using social media as a communication instrument to support decision making processes at the UAE police. The resulting theory is to be presented in the form of a framework – the logical components and propositions that constitute the structure and practices for designing, developing and evaluating organisational models for using social media as a communication instrument in supporting decision making processes in police organisations.

A proof of concept, in the context of this research, refers to the realisation of a small social media communication experiment (using an improved framework based on findings from the comparison between the current models and practices used at the UAE police, and models, trends, and practices discussed in related literature), in order to demonstrate its feasibility in engaging members of the public and communities in communication towards supporting more effective decision making in police organisations. The proof of concept will be discussed in Chapter IV.

In order to guide the design of the proof of concept, therefore, the research plans to compare and contrast the current models and practices implemented by the UAE police in using social media to interact with the communities and members of the public, and its

effectiveness in supporting decision making processes with various models, trends, and practices used by different police organisations worldwide identified in the literature, which will be covered in Chapter II.

The research design is based on using principles of the Grounded Theory methodology to uncover concepts in practice (i.e. theory) in relation to the research aim at the UAE police (Strauss & Corbin, 1990, 1998). Although Grounded theory does not require a review of the literature before data collection and analysis, related research in the literature is discussed in Chapter II, in order to identify the main areas of investigation to be used in the design of the proof of concept and verified by the data collected. This is a common practice in the Grounded Theory methodology (Glaser & Strauss, 1967).

Data collection is based on using semi-structured interviews and focus groups, as well as observation in practice to collect qualitative data as part of the evaluation of the proof of concept. Data analysis uses coding techniques from the Grounded Theory methodology (i.e. open, axial, and selective coding) in order to capture emergent concepts and articulate them in the form of a framework for using social media as a communication instrument to support decision making processes in police organisations. The research design will be covered in more detail in Chapter III.

1.5 Research Value

This research aims at uncovering a framework from practice that guides the use of social media to engage communities and members of the public in communication to support more effective decision making in police organisations. Concepts, principles and propositions emerging from practice are arguably useful for researchers who are concerned with the use of social media as a communication instrument to support decision making processes in organisations. In addition, the concepts, principles and propositions emerging from practice are arguably useful for police leadership and policy makers in police organisations because they bring practical insights into the design and development of a model for using social media as a communication instrument to support decision making processes in police organisations. Therefore, the output of this research contributes to both theory and practice.

The theoretical contribution is in closing a gap in the body of knowledge for a practical framework for using social media as a communication instrument to support decision making processes in police organisations, as discussed earlier in the research problem. The framework provides a structure and a set of propositions that can be used in future research on applications of social media communication in decision making.

The practical contribution is in useful insights into using social media to interact and share knowledge with the communities and

members of the public to support decision making processes in organisations, with a particular focus on police organisations as a case for governmental organisations. The insights are presented in the form of a framework that can be used not only in the UAE, but in other GCC countries (due to similarities of context and problems) and in other countries worldwide (as the investigation covered a range of nationalities), as will be discussed in more detail in Chapter VII.

1.6 Research Limitations

The main limitation of this research is the use of a single case study – the case of the UAE police. The proposed framework is uncovered from a proof of concept applied in the UAE, where Twitter is the main social media used, as will be discussed in more detail in Chapter IV. In addition, the findings reflect experiences and views of the communities and members of the public on the use of Twitter as a communication instrument for supporting decision making at the UAE police. However, the same practices are also used by police organisations in other GCC countries, which have similar contexts, and thus the research is also applicable to other countries in the region. In addition, as the investigation covered different nationalities, together with mapping the findings from the research with related literature, the research would be able to evaluate the framework with similar practices in various countries. These issues are discussed in more detail in Chapter VII.

Another limitation of this research is the use of only one type of social media – i.e. micro blogging using Twitter, to investigate social media as a communication instrument in supporting decision making processes at the UAE police. The reason for this is that Twitter is the more widely used social media technology in the UAE, among Internet users in terms of communicating with organisations. Therefore, in exploring different types of social media platforms, the review of the literature focused primarily on micro blogging, specifically using Twitter.

A third limitation of this research is the use of a partially functional proof of concept as opposed to a pilot as originally planned. In light of the late and unexpected restrictions imposed by the UAE police during the research process, it has not been possible to implement a fully functional pilot at that organisation, in order to capture first-hand experience on the interactions between the UAE police personnel and a sample of the communities and members of the public. However, the proof of concept has provided practical insights both to theory and practice, as will be demonstrated in the analysis and discussion chapters.

1.7 Thesis Structure

Chapter I – Introduction: this chapter described the context, in which police organisations in general, and the UAE police in particular, are working, and based on which, it defined the research problem and the research question that this research is addressing. The introduction

also set the aim of the research and identified its objectives, based on which it discussed the research strategy and research design along with the selection of the research methodology. Finally, this chapter provided a brief description of the anticipated value from the research, while highlighting the scope and limitations of the research.

Chapter II – Critical Review of the Literature: the literature review chapter explores models, trends, and practices discussed in related published work, in order to guide the setting of the research strategy and the design of the research and to design the proof of concept. The review of the literature is conducted on three levels. First, it explores different communication instruments and their use in supporting decision making in public organisations and the police in particular. Second, it analyses the evolution of Internet technologies from Web1.0 to Web2.0 and the impact of new technologies such as micro blogging on communication. Third, the review investigates social media as a communication instrument and its use in supporting decision making. Finally, the chapter explores new advancements in intelligent policing, especially in relation to the use of social media in collecting intelligence through knowledge sharing with communities and members of the public.

Chapter III – Research Design and Methodology: this chapter presents the research design and the selection of the research methodology that guides the data collection and analysis. It discusses

the selection of Grounded Theory, as a suitable research methodology based on the research philosophy, and methodical choice underpinning the research. The Grounded Theory research methodology is then used to guide the analytical sampling, data collection, data analysis, and verification and validation of the data. Finally, the chapter described the techniques adapted from Grounded Theory analysis methods for analysing data using open coding, axial coding and selective coding.

Chapter IV – Proof of Concept: this chapter presents the design of the proof of concept to evaluate ideas in an improved framework for using social media as a communication instrument in supporting decision making processes at UAE police. It starts by comparing and contrasting the UAE police social media practices with models, trends, and practices arising from the literature review, as discussed in Chapter II. Following this a proof of concept for using Twitter as a communication instrument to support decision making processes at UAE police is developed.

Chapter V – Data Analysis: this chapter presents the analysis of the data collected to evaluate the proof of concept of using Twitter as a communication instrument in supporting decision making, with a focus on the communication approach and governance. It starts by describing the interviews, the focus groups, and the approach used to present the analysis of the data and findings. The chapter then moves on to present the emergent concepts organised in five sections as per the five categories that emerged from the data analysis.

Chapter VI – Findings and Discussion: this chapter illustrates the framework for using Twitter as a communication instrument to support decision making. The findings from the analysis of data collected in the evaluation of the proof of concept of using Twitter as a communication instrument in supporting decision making are discussed in comparison to the related literature.

Chapter VII – Conclusions and Future Work: this chapter concludes the thesis by summarising the findings from the research, and discusses the contribution of the research to both the body of knowledge and to practice. The chapter is concluded by discussing some future work.

Chapter II – Critical Review of the Literature

The Internet is arguably one of the most influential innovations in the modern age. It has become increasingly the preferred medium for communication, collaboration, and exchange of information, views and opinions for people as well as organisations. This research is concerned with the ways the Internet, particularly social media, has become the preferred environment for people to communicate, collaborate, and exchange information and knowledge in ways that influence different fields of public life; and subsequently how organisations, particularly the police, can improve their decision making through the use of social media.

Social media is increasingly becoming a critical platform for communication in managing the relationship between organisations and the public, and hence offers a rich source for information and represents a vital tool for decision making. This chapter focuses on literature in the discipline of social media and its role as an effective way to communicate between governments and the public, and organisations and stakeholders, with particular emphasis on research related to the UAE. It also explores the changes associated with the adoption of social media and identifies different types of social media such as micro blogging, where more emphasis is placed on Twitter as the core instrument in the research.

The literature review also provides a review of information on the acquired value of organisations' use of social media, looking at governmental organisations in general, and police organisations – especially the UAE police – in particular. Communications' instruments and other social media are also reviewed, along with the concept of communication and the process of effective communication. Existing literature relevant to the decision making process, and the importance of understanding this process in organisations, are highlighted; this is particularly in government organisations, including police departments. How Twitter's role as a contemporary source of information that can be integrated in the decision making process, particularly in the context of police organisations, is also investigated in this chapter.

This research distinguishes between the terms information, knowledge and intelligence. Information is organised data in a way to get meaning out of it, whereas Knowledge is analysed information in a way that improves understanding and the ability to act (Herschel and Jones, 2005). Intelligence – in the context of organisations – is data gathered and analysed to improve decision making (Herschel and Jones, 2005).

2.1 Communication and the decision making process

Traditional communication has always been a good source of information for many decision makers. It includes radio, TV, printed materials, as well as face-to-face communication (Bertot *et al.*, 2010a), and enables precise and effective messages to be conveyed. However, traditional communication can be less effective in terms of the time in which information can reach the recipient. It is also less effective in terms of the availability of the recipient, or even the medium. Additionally, it is also less efficient in cases of reaching high capacity or volume audience (Chen & Tseng, 2016).

Yet, it is recognised that effective communication is the key driver for the success of any organisation (Malenko, 2014). It has been much researched over many years and includes contributions of researchers right up to the electronic era (Zulkeplia *et al.*, 2015). Its significance has been recognised in the private sector and in government organisations by reflecting a transparent image of those institutions, showing that communication is integral to making important decisions (Ashurst *et al.*, 2012). Initially, communication is the process of interaction, and exchange of information between two or more parties, using a variety of methods. It can also be described as the exchanging and sharing of ideas between individuals (Welsh & Jackson, 2007).

In organisations, it is likely to include meetings, discussions, and reports at a formal level, and email communications or chatting at an

informal level. Information is exchanged so that decision makers can make up their minds as to which route to take for the benefit of the organisation. Without information sourced from a variety of different interactions, decision makers are unable to have a clear picture of what needs to be done. This is evident in the way the markets are changing and organisations need to be fully aware of the global environment; they need to be able to assess and analyse the information before they proceed with a course of action, especially checking the credibility of such information (Castillo *et al.*, 2011, 2013; Abbasi & Liu, 2013).

It is important to understand the role of communication in organisational decision making as it is the medium that creates the source and the material for decision makers to use, but it is a complex process (Mykkanen, 2010). Communication in organisations can be internal between the employees at various levels, or it can be external between the organisation and members of the public (e.g. customers), and therefore certain ways of communicating may be more effective than others for different purposes (Ruck & Welch, 2012). The phenomenon of the Internet and social media has opened up a valuable medium for communicating messages between organisations and the public. Given the challenges the police and other law enforcement agencies are experiencing in operating within a constantly changing environment (Van den Born *et al.*, 2013; Yilmaz, 2013), the Internet offers a way of interacting with the public, whilst embracing that change.

However, it is not always easy for change to be accepted, either by the police and other law enforcement agencies or by the communities themselves. Face-to-face communications have been the traditional method of communication between people (Lundgren & McMakin, 2013; Warschauer, 2013). This format can be considered highly supportive for the emotional delivery of information, which is the main input in the decision making process (Stryker & Santoro, 2012). The nature of face-to-face communication allows the two parties to share the same location and make a direct contact simultaneously. This means that, when used to convey information, there is a shared commitment between the parties involved, as well as the use of discussion and identification; therefore, it supports socio-emotional conversation (Bohlke, 2013). For certain cultures, this is an important aspect of communicating with others, and such encounters can facilitate decision making as the participants are familiar with such modes of communication. In high-context cultures such as China, or Arab countries (including the Gulf States), the preference is for face-to-face communications, which they believe in increasing interpersonal relationships (Nikoi & Boateng, 2014); this builds trust and decisions are based on trust. This has a significance for communications between the police organisations in the UAE and the communities with which they are interacting with.

Communication has various other forms that create interaction with the participants such as written communication methods.

Organisations communicate with their customers by using advertisements to share information with them about specific products or services (Sanders & Canel, 2015). They also collect information from their customers in terms of the development processes about their operations, and thus they can fill the gaps in their products or services or even processes (Sanders, 2011). There are many methods that can be implemented, such as using paper-based surveys or face-to-face interviews, or recently complete online surveys that are accessible from different platforms and systems (James, 2014). Accordingly, organisations use verbal and written ways to collect information from stakeholders, to assist in building up information that can be used for their decisions, which may affect their performance in the near future. Government organisations have also adopted this approach to reach out to the public by communicating with them through surveys, to capture their opinions about their satisfaction with certain actions that have been taken, or certain processes that have been set (Taralunga, 2010). This is done as part of the public participation in planning and decision making. It creates trust and confidence and even helps to acquire new ideas that might be important inputs in the decision making process. The content of written messages has, therefore, as much impact as the medium by which they are communicated.

Making decisions depends on having the right information to hand; the quantity and quality of that information can have a significant impact on the organisation as effective communication determines the

right decisions are made (Makkinen, 2010). It has been noted that decision making can be seen as a social event (Falcione & Wilson, 1996; Habermas, 1998; Seidl & Becker, 2006), but organisations can benefit from this if the communication channels are effective (Makkinen, 2010). The Internet has changed the way communications are having an impact on decision making. According to Bullas (2010), decision-makers can connect with experts and colleagues online and can share experiences on-demand. This indicates that the information needed for the decision making process is more readily available than ever before; whilst communication has always been there to support decision making, traditionally this may have been a much slower process. Nor is there any reason to suspect that such online communications are any less effective despite the speed and breadth of information available. Indeed, the speed with which communications can now be shared may be an advantage for law enforcement agencies dealing with rapidly evolving environments.

2.1.1 Use of communication in public organisations

Communication is also important in organisations that need to engage with the public. Although the literature regarding political and media communication is rich in research, few studies shed light on the way that governments follow and organise external communication. Communication in government organisations has always been linked to bureaucracy, as it presents the nature of governments (Schillemans,

2012). Imposing regulations and procedures have shaped the relationship between the bureaucratic natures of government communications. As it is known that the bureaucratic mode of organisations tends to achieve reliability in their results and processes as well as effectiveness (Meijer & Torenvlied, 2014), it becomes evident that the applied external communication must follow the same objectives. Three models have been developed to reflect the bureaucratic mode for governments in terms of communication.

The first form is centralisation, where external communications are monitored by a central administration; here the government is establishing limited channels for external communication (Ruth-McSwain, 2011; Meijer & Torenvlied, 2014). Governments go for central control for inward and outward communication as a preventive action towards potential risks that are much related to communication; these may be risks such as affecting or damaging the institution's reputation, the weakening of accountabilities, and showing defects in the communication process. Accordingly, governments establish channels for their external and internal communication with gatekeepers, to assure the disseminated information as being adequate (Ruth-McSwain, 2011). Clear and evident examples for this model for outward communication are call centres, communications sections, emergency or crisis rooms (Meijer & Torenvlied, 2014).

The second model under government communication is formalisation. Formalisation emphasises the separation of personal matters and execution of tasks. In other words, dealing with the name of a government organisation must not be personalised but dealt with only on an official basis. In this vein, employees who are directly communicating with the public must communicate as functionaries, not on a personal basis. Creating organisational boundaries is the third form of government communication model; this is by clearly separating internal and external communication. Therefore, communication offices have been created to modernise and rationalise the interface between internal and external communications (Meijer, 2008).

Traditional approaches to communicating with the public have been through a process of participation; this has involved informing, consulting, engaging, collaborating and empowering (Coats & Passmore, 2008). To a certain extent, this communication process has been to absolve the public organisation from accountability and criticism that it is not offering public value (Coats & Passmore, 2008). It gives the public organisation more legitimacy, if it can show that communication with the public has played a major part in its decision making. Bond and Thompson-Fawcett (2007) argue that public participation may be more important than expert opinion in the case of public organisations, as the impact of decision making is on the public. However, there are others who argue that public engagement is ineffective and that it is simply a way of concealing the government's agenda (Coats & Passmore, 2008).

The use of the Internet and social media makes it more difficult for governments and public organisations to hide their motives, and they may consequently become more accountable through transparency.

Public participation have been mostly viewed more as a way of trying to improve public services, rather than as a way of supporting decision making throughout the years (McAteer & Orr, 2006; Chun *et al.*, 2010; Fung, 2015). Nevertheless, there continues to be much support for including public participation in decision making and governance (Duvic-Paoli, 2012; Fung, 2015), and recently perceived as a right since the United Nations enshrined it in its principles (Duvic-Paoli, 2012). It is possible that the effectiveness of processes for ensuring that the public participate in decision making may not yet be ready for new ways of communicating via social media. Yet this is an opportunity for organisations such as law enforcement agencies to engage with the public and improve their relationship with communities; their challenge is to involve the public and find ways in which they can do this effectively.

2.1.2 *Effective Communication and Policing*

More accountability to the public in policing and cooperation with the government has been called for by the Police Federation of England and Wales (Police Federation, 2016); they felt that communication with the public and with the government were not effective enough. Better communication with the public creates

confidence in the police and the work they are doing (Police Federation, 2016).

Effective communication with the public has benefits such as providing new information for the police to investigate, as well as the identification of new evidence, new witnesses and new suspects (College of Policing, 2013). Whereas the internal communications of the police are important, the interface with the public is essential for gaining trust and being seen, not as a political tool, but as a collaborative partner with the public; this gives them legitimacy, as they are meant to be public servants. Open communication is the key to partnerships between the public and the police (Britt, 2013). Traditional policing and communication channels may have changed but there is a move towards using all forms of media to get the message out to the public. The College of Policing (2013) recommends that the media be used and the best person to talk to the media is the one who has the best knowledge of any investigation; in addition, they suggest using the media most likely to reach the target group.

However, in Washington, the police department explored using online discussion groups in an effort to open up communication between police and the community (Derrick-Mills, 2014). This was not entirely successful in creating what the police had hoped would be a way of showing that they could interact with the public, but it does indicate that law enforcement agencies do appreciate the potential of the

Internet in helping them carry out their work efficiently and effectively. In the UK, Mawby (2010) describes how police, in their efforts to adapt to new technologies, have encountered challenges; people do not always trust the media. It is clear that police communication is an important and growing area. However, it requires specialists to deal with in the most effective way, and to ensure that the relationship with the public remains one of mutuality (Mawby, 2010).

2.1.3 Communication and technology

Progressing on from the traditional communication media of newspapers, TV and radio interviews, computer-mediated communication has been recognised for its character of low cost and low number of layers to communicate, compared to face-to-face communication (Herring *et al.*, 2013). The significance of computer-mediated communication is evident when it is seen to be helping and assisting in the sharing of more resources (Salaberry, 2013) and creating a private stream to share classified information, through protected functions and interfaces; this is helpful in the framework of critical decisions (Thomas, 2013; Monzani *et al.*, 2014). In other words, it can reach more people and yet be more private and confidential than other media. This is important as the public's relationship with the police is often one requiring confidentiality; yet there needs to be a way in which the public can use media that is both convenient for them (Heverin &

Zach, 2010; Baker & Hyde, 2011; Crump, 2011) and with which they feel comfortable.

The greater role of social media can clearly appear in the freedom that users have by a small click using their computers, tablets or smart phones to share, publish, manage, interact with other members and participate in a virtual community (Nah & Saxton, 2012). In the non-governmental organisations' environment (Yusof *et al.*, 2016), social media becomes a main source for disseminating information in an interactive way. In the UK one of the users of social media is the National Health Service, where 80% of the organisations use this means of communication (McCrea, 2014). Nearly one third of them use Twitter, although Facebook, YouTube and LinkedIn show that they tend to use the main channels to get their message across (McCrea, 2014).

This indicates that they know where their target groups are, as Facebook and Twitter have accounts exceeding one billion for Facebook, and 284 million for Twitter accounts (Kemp, 2015). On the other hand, instant messaging or short message service (SMS) usage has decreased in the global market (Chavin *et al.*, 2012), which may show that communication outputs are now targeted at groups rather than individuals. Whereas Facebook and Twitter may reach large numbers with one message, instant messaging is confined to private and personal usage. Social media has become much more a commercial space (Incite Group, 2014). Consequently, law enforcement agencies need to ensure

that they are using media most commonly populated by their target groups.

It is clear that using social media is a means of communicating quickly and effectively with the public and studying the experiences of other organisations can help determine a suitable model for UAE.

2.2 Social Media

Since its commercial propagation in the mid-nineties, the Internet has been used as a medium for communication and a source for information. However, with the rise of social media in the last decade, there has been a shift in the way the Internet, and the World Wide Web (WWW) in particular, have been used by individuals and organisations. The literature refers to this as a paradigm shift, associated with the rise of social media, from 'Web 1.0' (a first generation WWW) to 'Web 2.0' (a second generation WWW) (Chung *et al.*, 2015). This shift has resulted in engaging more people than before, from geographically dispersed areas of the world, to participate in many-to-many conversations and interact with each other in unprecedented ways. Internet users are becoming more motivated to engage in such conversations and interactions, especially as these conversations can be viewed by others.

This research distinguishes between the terms 'Social Media' and 'Web 2.0'. Whereas 'Social Media' are considered the application platforms and interfaces for multi-user interaction, 'Web 2.0' is

considered to be the underpinning engine for such interaction. The literature refers to 'Web 2.0' as the technologies (e.g. blogs, microblogs, wikis, discussion forums, text messaging, collaborative editing technologies, social sharing services, virtual worlds, and social networking sites) that enable multiple Internet users to interact and/or exchange information (Chun *et al.*, 2010; Hansen *et al.*, 2010; Kuzma, 2010; Kaplan & Haenlein, 2010; Darwish & Lakhtaria, 2011; Picazo-Vela *et al.*, 2012). The literature refers to 'Social Media' as the application interfaces and platforms that are built on the Web 2.0 technologies (e.g. messengers for different providers such as MSN, Facebook, Twitter, Wikipedia, YouTube, Flickr, StumbleUpon, SecondLife) that facilitate this multiple-user interaction across networks of connected devices (Hansen *et al.*, 2010; Kuzma, 2010; Tang & Liu, 2010; Auer, 2011; Picazo-Vela *et al.*, 2012). Therefore, social media constitute the applications or tools (e.g. Twitter, Facebook, Instagram, Snapchat, etc.) sitting on top of the Web 2.0 technologies (e.g. micro blogging) that enable users to interact and communicate. For example, Kaplan and Haenlein (2010) define social media as applications that are Internet-based, which *"allow the creation and exchange of User Generated Content"* by building on the *"ideological and technological foundations of Web 2.0"* (Kaplan & Haenlein, 2010 p. 61). Bertot *et al.* (2012) define social media as *"set of online tools that are designed for and centered around social interaction"* (Bertot *et al.*, 2012 p. 30).

Following from the above discussion, the term 'social media' is defined for the purpose of this research as: *online communication platforms that allow users to connect through various devices and interact and communicate using various types of content using Web 2.0 technologies.*

2.2.1 Impact of social media and technology

The spread of social media platforms (e.g. Facebook, Twitter, YouTube, LinkedIn, Instagram, Snapchat etc.) since the mid-2000s have been acting not only as powerful environments to communicate to people and influencing opinions of the public and communities (Auer, 2011), but equally as environments that allow people to have many-to-many communication to seek answers for challenging problems and gain varied insights and views through interacting with others (Bertot *et al.*, 2012).

Technically, the term 'social media' is much related to the partnership between Web 2.0 and User Generated Content (UGC). Firstly, Web 2.0 was initially introduced to the public in 2004, and it is a platform that allows for applications to be continuously updated and amended by all users in a collaborative way. In Web 1.0, which was formerly famous for applications such as personal and organisational web pages, Encyclopaedia Britannica Online, etc., were updated to Web 2.0 to incorporate more collaborative features such as blogs, discussion boards, and wikis. In this vein, and in order to take all the benefits from

Web 2.0, there are a group of functionalities that must be used and these helped Web 2.0 in being the reason behind the evolution in social media. These functionalities are important to effectively utilise the social media functions (Kaplan & Haenlein, 2010; Shen & Chu, 2014):

- RSS (Really Simple Syndication), a public tool used to publish intermittently updated content in regulated format such as news headlines.
- AJAX (Asynchronous Java Script), a method to recover information from web servers non-concurrently, permitting the upgrade of web substance without meddling with the presentation and conduct of the entire page.

The second element that contributed to Web 2.0 being able to develop the current social media is the User Generated Content (UGC), which refers to the different forms of media content that the end user can create and generate and which is also generally available. UGC provides a highly effective way for the consumers or users to interact through social media. The general public are the ones who create the online media content; not only creating but also circulating or initiating the content (Bowe & Ozuem, 2014). This is the way in which social media can best be utilised for getting communications out to the public. There are many advantages to this, although there are also risks, especially when considering the use of such media by law enforcement agencies. The police have a duty to protect the public and there must

consequently be processes put in place that safeguard the information they are disseminating, whilst keeping the public informed.

The main difference between the Web 1.0 era and that of Web 2.0 is the shift in power from the organisation (the broadcaster) to the Internet users. In the Web 1.0 era, the WWW acted merely as a one-way communication medium (i.e. one-to-many broadcast), in similar ways to the other more conventional types of media (e.g. television, radio, newspapers, etc.) (Porter, 2010; Bertot *et al.*, 2012). Thus, Internet users were generally passive recipients of information. In contrast, in the more recent years of the Internet (Web 2.0 era), social media empowered people from the different geographic regions to create, share and communicate information (Bertot *et al.*, 2012; Siamagka *et al.* 2015). Unlike conventional type media, social media relies ever more on UGC, which can be defined as information that has been created by users or the general public, as opposed to professionals or organisations (Bertot *et al.*, 2012).

Thus, communication at present is more interactive, through two-way or many-to-many interactions. This means that Web 2.0 has opened up channels of communication and given wider access to people in organisations to interact with the public. It is particularly relevant in organisations such as the police, where the College of Policing (2013) recommends that individuals dealing with specific cases are the best people to disseminate such information. These individuals are unlikely to

be professionals in social media, but it has opened up ways for them to communicate with their target audience. However, there also need to be strict guidelines for the content being disseminated, both in terms of language being used and information being disclosed; this is especially relevant to police organisations. The quality of the information must meet public expectations at all times, and this may sometimes be difficult to assess. Yet the preferences of the public must be taken into account when making decisions about the types of media channels to use for disseminating information. That is why it is important to understand the popularity of specific social media platforms.

2.2.2 *Types of social media and technology*

Social media have become worldwide phenomena through attracting and engaging hundreds of millions of Internet users worldwide and the number of participants continues to grow on a daily basis. Around three in every four people worldwide have at least visited a social media platform (Correa, 2016). In more developed countries the social media penetration is near universal. For example, in both the more developed as well as developing countries, the social media penetration among 18 – 29 year olds in Facebook for instance is high (e.g. in the USA it is around 86% and in Chile 94%) (Correa, 2016).

The list of most used social media platforms is topped by Facebook, Twitter, LinkedIn and YouTube (Kes-Erkul & Erkul, 2009; Kuzma, 2010; Picazo-Vela *et al.*, 2012), among many others. For

example, Facebook, the top social media platform in terms of number of users, reached over 1 billion users in August 2015 (The Guardian, 2015). This is approximately one sixth of the world population. Twitter, one of the top five social media platforms in terms of number of users, passed 300 Million active users in 2015 (Twitter, 2015).

Social media platforms differ in purpose and architecture. Each has a different architecture that guides the types of content communicated, the ways the users can interact, and the ways the content is managed (Lessig, 2009; Auer, 2011; Hansen *et al.*, 2011; Bertot *et al.*, 2012). Table 2.1 illustrates social media forms, types of content communicated and examples of social media platforms.

Regardless of the degree in which they vary in terms of their purposes and architectures, social media platforms generally share the focus of enabling users to interact, communicate and exchange different types of content in a social environment (Porter, 2010; Bertot *et al.*, 2012). Moreover, it can be observed from trends in these social media platforms in recent years that they have been increasingly converging in the type of content communicated (Agarwal *et al.*, 2016). For example, Twitter started as mainly text but it evolved to allow users to communicate photos and/or videos besides text. It is not only the users looking to engage with a target audience, but the social media platforms themselves recognising the needs of their users.

Table 2.1: Social media platforms (adapted from Tang and Liu, 2010 p. 1)

Social media form	Main purpose	Types of content	Example platforms
Forum	Finding quick answers and sharing information around a wide range of topics	Text	Yahoo answers, Wiki answers
Media sharing	Sharing multimedia	All types	YouTube, Instagram, Flickr
Blogs	Sharing insights and inviting comments and debates	Mainly text	WordPress, BlogSpot
Microblogs	Sharing views and opinions	Mainly text	Twitter, Foursquare
Wikis	Collaborative editing on topics of interest	Mainly text	Wikipedia
Social networks	Socialising and keeping in touch	All types	Facebook, LinkedIn

The relationship between the public and the police must be one of mutuality, which means it is looking at social media which have more interactivity and provide a two-way communication system. There also needs to be consideration of the main purpose and content of any communications the police wish to share with the public as this will influence the type of social media selected.

2.2.3 *Micro blogging*

Much of the information disseminated by the police will be textual communications. Micro blogging allows users to write short messages in text and is regarded as a particularly social form of

communication. It is used to update on a very regular basis, and acts almost like a conversation, as it usually includes observations, information about activities and interesting content (Ehrlich & Shami, 2010; Cleveland, 2016). Unlike other more traditional media, micro blogging (e.g. Twitter) offers Internet users the ability to express their views and opinions in real time, with easier accessibility and a more user friendly format (Pak & Paroubek, 2010; Auer, 2011; Agarwal *et al.*, 2016). This is evident in the way micro blogging is becoming, more and more, one of the most popular communication technologies among Internet users, where millions of messages are communicated in micro blogging platforms such as Twitter on a daily basis (Pak & Paroubek, 2010; Agarwal *et al.*, 2016).

Topics communicated on micro blogging platforms range from personal values and beliefs, for instance on political or religious positions (Pak & Paroubek, 2010; Vergeer *et al.*, 2013), to personal views on, and experiences of, products and services they use (Pak & Paroubek, 2010; Agarwal *et al.*, 2016). For example, top online newspapers such as CNN Online and NY Times Online have referred to social media as playing a vital role in influencing politics and policy, for instance, during the Arab uprising (Gross, 2011; Preston, 2011; Shane, 2011).

By sharing their opinions and views on micro blogging platforms, and social media in general, Internet users become part of a virtual community. Auer (2011) gives the example of a CNN news reader who

once decided to share their opinions and views through commenting on the CNN micro blog; this user has automatically and seemingly become part of the CNN readers' community.

As a result, micro blogging platforms have become invaluable sources of marketing research and communication through surveying public opinion and sentiments (Pak & Paroubek, 2010; Yonggan *et al.*, 2015). This has led many organisations to actively use micro blogging platforms to better understand their customers, for instance through polling such platforms to gather views of the public and communities on the products and services they offer. They are also used to influence public opinion through analysing Internet users' sentiments and responding to them accordingly (Agarwal *et al.*, 2016). Yet, organisations still face the challenge of having appropriate strategies and methods to systematically uncover, analyse and influence public opinion and views on areas of interest (Agarwal *et al.*, 2016).

Twitter has been one of the more popular micro blogging platforms and is more widely used worldwide (Jaring *et al.*, 2015; Ndasauka *et al.*, 2016). This is arguably because Twitter allows Internet users to post short messages (i.e. tweets) in real time (Agarwal *et al.*, 2016; Auer, 2011). For example, Twitter played a critical role during the Arab uprising as it allowed people to share quick messages in real time (Gross, 2011; Preston, 2011; Shane, 2011; Hussain & Kashif, 2015). It also played a role in the recruitment processes that ISIS has run through a

social media campaign. ISIS has used a small number of active Twitter accounts compared to the results acquired. For example, 2014 witnessed the number of active accounts created in Twitter counting 46,000-90,000 worldwide, which included 1,000-2,000 with the “hashtag jihadist” (Freeze, 2015) being the most active (Berger & Morgan, 2015). Twitter presented a recruitment channel for ISIS, accordingly it became essential to disrupt the social media that ISIS uses as its key channel for communications, contact and recruitment. The current counter tactic is for the service providers to suspend any account that draws a complaint for posting pro-terrorist material. Twitter closed over 10,000 accounts in a two-day period in April 2015 (Nakashima, 2015).

Whether the restriction on the number of characters (140 characters) in Twitter is actually encouraging or discouraging particular types of communication, and whether it is actually promoting open and inclusive, or closed and restricting conversation, is yet to be uncovered (Auer, 2011; Scott, 2015). However, what can be observed is that as a response to the limitation of short messages on Twitter, Internet users tend to make spelling mistakes and shorten their messages by using acronyms, emoticons (i.e. expressions that illustrates emotion or mood using letters and punctuation) and any character that expresses special meaning (e.g. a hashtag ‘#’ symbol to categorise or refer to a topic, and ‘@’ symbol to ‘refer to’, or ‘alert’ other users on the micro blog). Furthermore, Twitter can be an open source, or repository for

researchers and the public through Twitter Application Programming Interface (API) (Twitter, 2013; Li & Du, 2014; Agarwal *et al.*, 2016).

A study by Ehrlich and Shami (2010) found that organisations were using Twitter as its value was in the way people could access good information more quickly than from any other source. Credibility was also highlighted and business users were happy to pass on information that was useful and what they regarded as quality (Ehrlich & Shami, 2010; Cleveland, 2016). This has implications for the use of Twitter by organisations such as the police, as it shows that their communication can be rapidly disseminated, and be deemed credible and useful. In terms of social media, it indicates there can be a good fit for police using Twitter as a communication tool.

In addition, the use of Twitter in the Arab uprisings shows the extent to which it has been used and is a medium of preference for disseminating information rapidly to large numbers of users. As mentioned earlier, the public are more sophisticated in their usage of social media and they are looking for quality information. Twitter has become a trusted source of information and this can further enhance the relationship between the police and the public. This is why Twitter has been selected as the focus for this study.

2.3 Usage of Social media

Social media have been changing the dynamics in the relationship between organisations and the public. Individuals and communities have been increasingly empowered through social media. Thus, social media have been offering organisations opportunities to interact with the public and communities in ways not as widely available in other types of conventional media such as radio, newspapers, or television. As a result, social media are increasingly becoming platforms of choice for both government organisations, including the police, the public, and communities. These include the Metropolitan Police in the UK which established its Twitter account to tell, notify, educate, instruct, and advise the public with incidents and major updates for incidents, news, and events (Metropolitan Police, 2016).

Many governments, like organisations in general, have adopted social media as a way of communicating and exchanging information with the public and communities, developing and managing customer relationships, enhancing public participation for supporting decision making processes, sharing information inter- and intra- organisation and supporting services such as recruitment, and events for marketing campaigns, and success stories of customers (Digitalgov, 2016; Schaefer, 2016). The following points summarise some of the areas in using social media that are common to organisations in general:

- ***Communicating with the public and communities:*** social media can be used by organisations not only to broadcast or share information with the public and communities, but more importantly to communicate with the public and communities more efficiently, cheaper and using fewer resources than conventional media, especially in the Business to Business environment (B2B), and even in non-profit organisations (Kuzma, 2010; Landsbergen, 2010; Attouni & Mustafa, 2014; Siamagka *et al.*, 2015)
- ***Developing customer relationships:*** social media enables organisations to create, nurture and manage customer relationships, and hence can be vital in creating competitive advantage (Picazo-Vela *et al.*, 2012).
- ***Enhancing participation among the public and communities in decision making:*** social media provides more convenience for Internet users, who can access, understand and provide feedback on the information provided by governments (Dorris, 2008; Chun *et al.*, 2010; Kuzma, 2010; Fung, 2015; Kleinhans *et al.*, 2015)
- ***Sharing information within and across government organisations:*** collaboration and sharing information can lead to enhanced performance among government organisations (Chang & Kanan, 2008; Dorris, 2008; Fung, 2015; Kleinhans *et al.*, 2015)
- ***Recruitment activities:*** organisations use social media not only to promote job openings but also to research their job candidates (Dorris, 2008; Brown & Vaughn, 2011)

In addition to the above, government organisations have been using social media in areas that are more relevant to them, through embracing and promoting accountability and transparency, adopting and promoting democracy by engaging the public in governance, enabling cooperation between them and the government, adopting and promoting crowdsourcing and innovations, and increasing trust in these organisations by empowering the public. Social media provides opportunities specific to government organisations through transforming governance and the power relationships between government organisations, the public, and communities, creating more open and transparent governments at the level of cities, governorates, or countries (Picazo-Vela *et al.*, 2012; Meijer & Torenvlied, 2014). As indicated and discussed by Mossberger *et al.* (2013) the concept and application of e-government becomes more related to social media and hence local governments can interactively engage with the public at a local level.

The following points summarise some of the areas for using social media that are more relevant to government organisations:

- ***Embracing and promoting accountability and transparency:*** communicating with the public about what the government organisations are doing can encourage accountability and transparency (Bertot *et al.*, 2010 a; Chun *et al.*, 2010; Cromer, 2010; Jaeger & Bertot, 2010; Lathrop & Ruma, 2010). The Obama administration has always

been calling for transparency, joining in or taking part, and cooperating using e-government and information technology (Ganapati & Reddick, 2012; Mossberger *et al.*, 2013); interactive tools such as social media have the capacity to advance such goals.

- ***Adopting and promoting democracy through engaging the public in governance:*** for example, using social media to engage and empower the public to participate in policy shaping and application, in decision making and/or voting (Bertot *et al.*, 2010b; Chun *et al.*, 2010; Kuzma, 2010)
- ***Enabling cooperation between the government and the public:*** for example, engaging the public in the design, development and delivery of services and asking for their feedback to enhance the quality and responsiveness of services (Bertot *et al.*, 2010b; Picazo-Vela *et al.*, 2012); this has been achieved by empowering individuals and communities, through having their voices heard (Copitch & Fox, 2010; Dene *et al.*, 2012; Van den Born *et al.*, 2013).
- ***Adopting and promoting crowdsourcing and innovations:*** for example, creating environments for government and people to share knowledge and use crowdsourcing in innovation management and deployment, in relation to social issues of interest (Bertot *et al.*, 2010b).
- ***Increasing trust in government organisations through empowering the public:*** engaging the public in what government organisations are doing, and enabling them to collaborate and participate, by giving them the ability to share their feedback and ideas about the services provided by

government organisations, can lead to increased trust by the public (Picazo-Vela *et al.*, 2012).

Table 2.1: Summary of usage of social media in organisations

Type of Organisation	Usage Areas
Usage in organisations in general	<ul style="list-style-type: none"> • Communicating with the public and communities • Developing customer relationships • Enhancing participation among the public and communities in decision making • Sharing information within and across government organisations • Recruitment activities
Usage particularly in government organisations	<ul style="list-style-type: none"> • Embracing and promoting accountability and transparency • Adopting and promoting democracy through engaging the public in governance • Enabling cooperation between the government and the public • Adopting and promoting crowdsourcing and innovations • Increasing trust in government organisations through empowering the public

The potential value of using social media as described above, together with the increase in using social media by the public and organisations, has resulted in government organisations considering social media as an integral component of their e-government transformations. For example, various US government organisations have been encompassing social media in a wide range of their e-government activities, especially in communicating and interacting with the public and organisations, and empowering them to participate in governance (Bertot *et al.*, 2010a, 2010b; Jaeger & Bertot, 2010; Jaeger *et al.*, 2010; Lathrop & Ruma, 2010; Bertot *et al.*, 2012; Picazo-Vela *et al.*, 2012; Mergel & Greeves, 2013). This is evident in the wide use of social media platforms, including blogging, micro blogging, and wikis to share information, communicate and collaborate both with the public and among other government organisations in the USA (Hanson, 2009; Snyder, 2009; Bertot *et al.*, 2012). Consequently, expectations have been arising among US public and organisations that government organisations and services are accessible through social media (Jaeger & Bertot, 2010).

The USA has a longer relationship with social media than the UAE and therefore it can be used as an example of the experiences encountered. However, there are laws in the UAE that are not applicable in the USA. The police have had to run a campaign to alert users to ways they could be violating social media laws in UAE. For example, it is a violation to post pictures of others on social media networks without the

permission of the participants and the offender could be jailed for six months, as well as fined. Parents who fail to protect their children from danger could also be jailed, and this could be applied in cases where young people endanger themselves through posting on social media.

Social media is monitored closely by the UAE police, and this may present a challenge when trying to gain the trust of the public. It is a possibility that the public may see the police simply as a figure of authority and this may deter members of the public from engaging in two-way communication. Instead of the collaboration with the public that is enjoyed by similar organisations in the USA, it may be much more difficult to create the cooperation that is required for successful and effective communication with Emirati communities. However, it is essential for the public to be involved in the decision making process.

2.3.1 Social media and decision making

Decision making refers to a procedure that people use to recognise and assess an issue and then determine potential solutions for the problem (Al-Tarawneh, 2012). People often make quick decisions regarding everyday issues that do not require the need for professional investigation (Chang, 2012), but effective and informed decision making is a vital skill needed for any business to progress and achieve its objectives. It is perceived as a normal process for management within a business (Antunes & Costa, 2012), but the most important aspect of

decision making is the quality of the information upon which decisions are made.

Social media can be a valuable instrument for organisations, since it gives up-to-date information that can be shared, for example relevant in times of disasters as social media becomes a channel for dissemination (McClendon & Robinson, 2013; Alexander, 2014). It allows communication and collaboration in times of need; decisions can be made based on live coverage of events.

This collaboration can be an important tool for multinational organisations as it connects them effortlessly with branches in different parts of the world (Macosenz & Ladougla, 2010). In addition, social media can be used as a place for employees to interact and this too can help with decision making (Sema, 2013). This would entail having an internal system, but it has also been shown that archived information is valuable in facilitating the decision making process (Treem, 2012). It means that stored information can be quickly and easily retrieved from social media sites (Mejova *et al.*, 2011).

One of the issues with modern life is that there never seems to be enough time to carry out all the tasks required in a company. Searching for information in order to make decisions can be time-consuming. Use of social media, such as Skype (Skype, 2016), enables contact with others to elicit opinions and thus can reduce time taken for

face-to-face meetings to access the required information for decision making (Ullman, 2011).

Even though people may not be using social media to its full potential at this stage, there can be little doubt that the use of technology is bound to increase the demand for rapid information to facilitate decision making in the future (Kiron *et al.*, 2012).

Social media is already being used by many organisations as a way of engaging with their customers. It can be used for promoting products or services and it also allows customers to provide feedback and reviews. This feedback enables organisations to understand their customers and make decisions based on their needs. Organisations can therefore utilise their end users for the innovation of new products or services (Von Hippel *et al.*, 2011; Kruschwitz, 2012).

Additionally, staff members should be encouraged to use social media. Preventing them from having online access creates a shadow of a doubt about their integrity that can harm their confidence. With clear rules, even workers in strict commercial enterprises, such as the financial or pharmaceuticals sectors, can utilise online networking effectively. What is more, the advantages can be significant. Internally, it can turn into an engagement instrument, break down barriers, and increase coordinated effort. Externally, there are huge advantages to having the staff members on online networking, including having more "representatives" spread the news about the brand (Clark, 2013).

It is important to take a look inwardly, as well as externally, at social networks. Checking what is mentioned regarding one's organisation on Facebook or Twitter is essential. In the event that there is an issue or objection of any kind, one will get to know about it straight away and can take some action. Internal social networks such as Chatter (Chatter, 2016), for instance, permit everybody in the organisation to view the tasks that other people are working on, and enable information to be shared so that better choices can be made.

Despite the many advantages of social media for decision making, there are also risks involved. Too much information provided online may take away the competitive edge from organisations, and this may reduce the amount of information that is shared, thereby also reducing its availability for informed decision making (Yuan *et al.*, 2013). Alternatively, too much information may make it difficult to sift through all the options and to determine what is useful or not (Yuan *et al.*, 2013). There is also the potential for too much time wasted on social media sites, as this can result in poor productivity (Conner, 2013), and thereby reduce many of the advantages.

With reference to the risks, police organisations may need to find a way of ensuring that only quality information is dispersed, but that there are also limits placed on the amount of information that is communicated. It is clear that there needs to be a framework in place to cover all the risks, so that social media is used to its best advantage.

There is a line between building a relationship of trust and filtering communications, whilst being aware of the power and potential use and abuse of social media platforms.

2.3.2 *The Power of Social Media*

In the twenty-first century, revolutions may not be broadcast publicly in the way they used to be, but it seems they are now more likely to be tweeted, blogged, messaged, and arranged on Facebook. This is shown in the way uprisings spread across the Arab states in 2010 and 2011, resulting in the fall of regimes. Subsequent to breaking down more than 3 million tweets, gigabytes of YouTube substance and a large number of blog entries, it was concluded that online networking assumed a key role in forming political debates during the Arab Spring (Howard *et al.*, 2011). Discussions about revolution frequently preceded significant occasions, and online networking conveyed stories which encouraged protests to cross over national borders (Kassim, 2012).

Online networking conveyed a course of messages regarding freedom and democracy throughout North Africa and the Middle East, and raised desires for the achievement of political uprising (O'Donnell, 2011). Individuals created social networks and arranged political activities; online networking turned into a political force. Although much of what was known about the role of social media was anecdotal, there is now proof in the form of a database of information collected from all

the main social media sites, which shows that social media played a pivotal role in the Arab Spring (Howard *et al.*, 2011).

During the week leading up to Egyptian president Hosni Mubarak's resignation, for instance, the aggregate rate of tweets from Egypt regarding political change in that nation increased from 2,300 a day to 230,000 a day (Kassim, 2012). Recordings of protests and political discourse circulated the web and the main videos received more than 5 million viewings (O'Donnell, 2011). Twitter offered proof of where people taking part in conversations were located during these revolutions, as the database provided insight into digital discussions that may have been going on (O'Donnell, 2011). This was because most people were using mobile phones rather than social media, but the information available on Twitter allowed researchers to estimate and evaluate a wider picture of usage (Howard *et al.*, 2011).

Kassim (2012) reveals that information was obtained directly from huge digital archives that the researchers created to cover a particular period. Political conversations in online platforms forecast unrest in both Tunisia and Egypt. In the case of Tunisia, discussions about freedom, democracy government and revolution on blogs and Twitter were regularly spread prior to the protests. Twenty percent of blogs were assessing the authority of the leadership on the same day that the president was put in a position where he was forced to resign, an increased 15 percent from the month before (Howard *et al.*, 2011).

The topical subject for Tunisian blogs was the word 'revolution', before a huge rally was organised and forced the old administration to secede power.

Despite the fact that social media in itself did not bring about change in North Africa, it adjusted the capacity of the indigent population to influence domestic issues. Online activists created a virtual environment of a society, where problems were debated that could not be examined openly (O'Donnell, 2011). Unexpectedly, government efforts to reduce social media conversations may have induced more open activism, particularly in Egypt; individuals that were cut off in efforts to close down the Internet, especially the working class Egyptians, may have gone out onto the streets when they could no longer view the protests online (Howard *et al.*, 2011).

Such events demonstrate that a general feeling of shared grievances and potential for change can grow quickly once unharnessed, and that the power of social media should not be underestimated. Their opponents utilised online networking to determine objectives, exhibit solidarity and arrange demonstrations, thus bringing dissidents and protesters together. They used the power of the people by disseminating information that could be used for decision making. Social media reduced the psychological barrier of fear of reprisals, through helping people to interface with each other and also by providing information. It provided many people in the Arab regions with the

knowledge that others were also involved, and that it was not only their nation that was suffering hardship or injustice. Decisions could be made through the information that was freely available. Social media for the first time gave activists a chance to rapidly spread information, while not being concerned with government rules and recriminations.

The UAE police are seeking a way of harnessing the power of social media so that it works in their favour. However, the challenge they have is where they are still regarded as the established authority and where there may be recriminations for members of the public who decide to collaborate with them. Although they need the trust of the people, the police still need to keep a professional distance and, whereas those involved in disseminating information during the Arab Spring used social media to their advantage, a law enforcement agency must be more circumspect. However, the use of social media by online activists has provided important information on building virtual communities and how to engage in discussions that bring about collaboration. It has also provided information on how such discussions can be monitored to reduce risks. Paramount to the police role is the duty to protect the public by reducing risks and this was clearly seen during recent events in Europe. Twitter was used as an instrument to protect the public by communicating with them to avoid the area around a shopping centre where a shooting incident was taking place, and to stay indoors (Yahoo News, 2016). This is a good example of how social media can be used effectively, and demonstrates how important it is to

have an effective means of communicating with the public. It is this trust in the police that UAE law enforcement agencies need to develop, and this study seeks to explore ways of developing such trust.

2.4 Intelligent Policing

Intelligent policing refers to a policing framework or model that was created for the assessment and management of risk to control crime (College of Policing, 2013). Intelligence officers act as advisers for operations, as opposed to operations directing intelligence. The National Intelligence Model (NIM) is a model that is used successfully internationally and uses four intelligence products (Evans & Kebbell, 2014):

- Strategic assessments (where decision makers are provided with a broad perspective of information which allows them to plan and make judgements)
- Tactical assessments (where emerging patterns are identified to help with operational day-to-day planning)
- Target profiles (where details of individuals are released to support an ongoing operation)
- Problem profiles (where options are presented to assist decisions about actions to take)

However, Karn (2013) argues that it needs more than a model such as NIM to be introduced into policing; it also requires a change in

the organisational culture. Everyone in the organisation needs to be involved and committed. This is where there may be problems in ensuring that strong leadership commitment is available to motivate their workforce (Police Executive Research Forum, 2014).

Intelligent policing increased significantly internationally after the September 11th 2001 terrorist attacks on the US, when it became evident that more intelligence and fundamental changes in policy were needed for law enforcement and security (International Association of Chiefs of Police, 2014). Preceding these attacks, most police forces were more reluctant to share information with each other, although it is recognised that engaging with communities is a way of preventing acts of terrorism (International Association of Chiefs of Police, 2014).

The intelligent policing model expands on earlier models, in particular crime control, through analysing information and seeking patterns to identify levels of risk (Siegel, 2015). The origins of this kind of policing came with demands for the law enforcement officers to invest more time using witnesses and observing known offenders in order to reduce criminal activities. A responsive system had been the principle strategy for policing, rather than a prevention system. However, as wrongdoing was seen to exceed police power in the United Kingdom, there were calls for other strategies that would more efficiently make use of the available resources (O'Donnell, 2011). It was noted that police were investing a lot of energy reacting to specific occurrences, yet not

effectively handling the issue of repeat offenders. Early reports from the Audit Commission, as well as Her Majesty's Inspectorate of Constabulary (HMIC, 2008), pushed for an expanded usage of knowledge, reconnaissance and sources to target guilty parties, with the goal that police could be more flexible in fighting wrongdoing.

However, intelligent policing did not really come into its own until the September 11th terrorist attacks in 2001 changed the way that policing could be directed to prevent as well as protect. Intelligence-led policing can be defined as information plus analysis (Buckley, 2014). It is the combination of data and the interpretation of that data that allows decisions to be made on information received (Buckley, 2014). Although it is possible that analysis can be carried out by computer, it requires trained people to be able to make the assessments that can inform such decisions (College of Policing, 2013).

The importance of this analysis cannot be underestimated, but the accuracy of the analysis is dependent on the quality of the information received (College of Policing, 2013). There has been some conflict, however, in the amount of information that is shared, which has an impact on the quality of the data; information is seen as a source of power (Dept. of Health, 2012). It is also argued that police officers are not the only professionals to be involved in collecting and evaluating such data and that intelligent policing is a collective endeavour involving professionals across a wide range of fields (Perez, 2010).

Public opinion towards proactive policing is viewed more positively now, and there are only certain sections of the community, mainly older people, who prefer visible patrols (Karn, 2013); this is possibly because of high profile media reports which show that targeted intelligent policing is effective. The collaboration with other professionals has a significant impact on its effectiveness, and these relationships need to be carefully nourished within the UAE. This may take time as many UAE industries are tightly regulated, often for security reasons, and may be reluctant to engage with the law enforcement agencies. There is also the issue of privacy and data protection, which may make other professionals reluctant to get involved. Article 31 of the UAE Constitution (EDRM, 2016) enshrines the right to privacy of communication, and there are several laws which protect this right. Even if the information is accurate and deemed to be in the public's interest, any communication about an individual's private or family life is banned. Both the police and the public may need to be cautious in their use of social media.

2.4.1 The use of social media for intelligent policing

Like many governmental organisations and law enforcement agencies, police organisations have been exploring the use of social media in managing the engagement and interaction with the public (Cooke & Sturges, 2009). Through social media, police organisations have more opportunity to reach and communicate with the public in real

two-way communication (dialogue) than was possible with other types of media (e.g. website monologue). This has led to individuals and communities being increasingly empowered, through having their voices heard in ways not possible with other types of media (Cooke & Sturges, 2009; Copitch & Fox, 2010; Deneff *et al.*, 2011; Van den Born *et al.*, 2013). As a result, it can be observed that social media are increasingly becoming platforms of choice for both police organisations and the public (Deneff *et al.*, 2011; Van den Born *et al.*, 2013), and hence play a critical role in engaging with the participants.

Police organisations have the opportunity through social media to encourage individuals and communities to communicate and exchange important information and concerns, based on which police organisations can improve their understanding and service to these communities and hence influence their perceptions. Thus, through social media, police organisations have the opportunity to engage with participants to collect information about incidents, for example, not only through monitoring public opinion, but equally importantly through enabling better understanding, responding to, and influencing public opinion (Cooke & Sturges, 2009).

Accordingly, social media represent an invaluable media for police organisations, not only to improve performance through more intelligence-led policing (Ratcliffe, 2010; 2016) but also to enhance public trust and support, through creating a more open police culture

(Cooke & Sturges, 2009; Copitch & Fox, 2010; Chu *et.al*, 2016). By engaging with the public, police organisations can collect information and intelligence necessary for making informed decisions. Thus, information collected in the context of police organisations can be viewed as part of a decision making process that uses social media to manage cycles of monitoring, analysing and acting on matters of importance to individuals and communities. In spite of the rich environment that social media offer to police organisations, however, the effectiveness of the decision making process remains questionable (Ratcliffe, 2016). This may be due to the quality of the information received or, in the case of UAE, the limitations placed on the public, who may be wary of providing too much information given the country's cybercrime laws.

2.4.2 Knowledge sharing between public and police

There are numerous ways online networking can be utilised to help law enforcement officers. Knowledge and knowledge management are recognised as being important for businesses, but also for society (Gaal *et al.*, 2011). The knowledge management process incorporates three main activities:

1. Capture and creation
2. Sharing and dissemination
3. Acquisition and application

It is the second of these activities, the knowledge sharing, that is relevant to this section. Sharing knowledge is essential for the success of any organisation in achieving its objectives, and it is becoming more evident that social media is an effective way of sharing and disseminating such knowledge.

Social media allows collaboration and this means that more people are involved in sharing valuable knowledge; groups of people are more likely to expand and exploit the knowledge they have (Gharis *et al.*, 2014). Technologies such as Web 2.0 enable users to interact with each other and become more socially connected.

There has been a growing interest of the police in the use of social media for interacting with the public (Crump, 2011; Deneff *et al.*, 2013), and police forces now have more experience of using social media. There is extensive use of YouTube for posting videos of incidents, and there is potential for joint sharing of knowledge with the public (Sayre *et al.*, 2010). However, Twitter is seen by police forces in the UK as a major means of engagement with the public, given that it is easily accessible (Crump, 2011; Deneff *et al.*, 2013). Priority is given to openness and speed, rather than security, and this is some distance away from traditional policing (Crump, 2011; Chu, *et al.*, 2016). Although some find this shift disconcerting and are cautious in their use of social media (Zittrain, 2010), police Twitter accounts manage to attract a sizeable number of followers (Crump, 2011; Deneff *et al.*, 2013).

The kinds of messages shared by the police tend to relate to official notifications, reports of incidents and requests for information; there are very few responses to reports of crime as there is a concern that such reports will not reach the right people (Crump, 2011). Twitter is therefore seen more as a message board, and there is also little proof that information received through Twitter is forwarded (Crump, 2010); because of its temporal nature, a message is deemed newsworthy within a very short window of time (Naaman *et al.*, 2011), before recipients move on to the next one. It was also found that people discuss more and forward less if the information relates to local events (Naaman *et al.*, 2011). This limits the extent of the knowledge sharing to the group of existing followers. Consequently, it means that the police need to be constantly finding ways of expanding their group of followers in order to share knowledge across a wider area.

Crump (2011) recommends that the police encourage retweeting by ensuring that the content is more interesting, and that they develop platforms where more feedback from the public is involved (Crump, 2011). There is clearly potential in using Twitter, which is most effective when used in real time, but this may present a challenge to police services, where officers are not sure where to draw the line between being an objective professional and being an online collaborator (Brainard & McNutt, 2010). As Naaman *et al.*, (2011) stated, discussion is a key aspect when producing information on Twitter about local events but this requires more personal participation. Consequently, the

objectivity associated with providing impersonal information may be compromised if police attempt to engage in this way with their followers. Social media requires engagement with the public in order to share knowledge effectively, but more dialogue is needed in order to support this. There is a conflict between openness and reputation, as professionals try and negotiate this dual role; they have to create a balance between being professionals who are reporting knowledge, and being active participants in the dialogue. However, it seems that platforms such as Twitter are popular with many sections of the public as a means of being informed of what is happening in their local neighbourhoods (Crump, 2011).

As younger people tend not to read newspapers for information, but rather gain their knowledge from social media, it is seen as important for the police to have a presence in order to communicate with this section of the public (Dene *et al.*, 2012). Information is generally relayed through Twitter or Facebook, as these are the most popular means of accessing younger people; general information that was previously disseminated through press releases or on websites is thought to be more widely accessed by a larger number of people now on social media (Dene *et al.*, 2012). It has been found that Facebook is more effective if used sparingly, and that there may be better responses from the public, who are more willing to share such messages with their friends (Dene, *et al.*, 2012).

At a local level, social media can be effective in sharing knowledge with communities, and community police officers use mobile devices to advise the public of their whereabouts, to discuss safety issues and to provide a point of contact. There have been some issues with this initiative, however, as there is little proof that it has been effective (Commons Select Committee, 2012). Nonetheless, the Metropolitan Police intend using mobile smart devices as part of their strategy for exploiting the organisation's information (Hall, 2013). In addition, police forces in the UK continue to support mobile technology as a way of increasing police visibility (Cass, 2014; Rotherham Advertiser, 2015; SYPC, 2015). In communities in Finland, where virtual policing has been established since 2008, it has been used effectively as a means of reporting child abuse (Dene *et al.*, 2012); this was encouraged by creating emotional bonds with social media users, so that they felt they could inform the police about their concerns (Calcara *et al.*, 2015). The visibility of having police online also appears to give people a sense of security, according to a senior Finnish constable (Saarinen, 2015). Other countries, such as the USA and Canada, have also been experimenting with virtual policing (Naila & Newman, 2013; Kappeler & Gaines, 2014). However, these kinds of initiatives seem to be limited to local policing and are not common practice.

The decision making process in organisations involves a number of activities such as intelligence gathering, analytics, information model development, collaborative support, alternative assessment, and

decision application (Burstein & Holsapple, 2008a; Martinez *et al.*, 2010; Sauter, 2011). These activities are becoming more and more integral to business processes, and embedded within an organisation's information system, to help the organisation achieve effective decision making; this is through, for example, reducing decision time, enhancing user satisfaction, improving ability to present systematic rationale for decisions and facilitating knowledge acquisition (Antunes & Costa, 2012). Social media enable organisations to reach, communicate and interact with their customers and the public in real time, and hence provide a source for intelligence through information gathering, collaboration, analytics and pattern analysis; in this way social media can provide organisations with opportunities to achieve quicker decision time, enhanced user satisfaction, improved ability to present systematic rationale for decisions and facilitate knowledge acquisition. Using social media can serve as a powerful tool for supporting decision making, through creating environments to facilitate and encourage communication between police organisations and the public. There is also the added benefit of being able to create intelligent environments where trends are monitored in real time and decision making processes are triggered automatically. This means that social media can both expedite and facilitate the whole decision making process, saving time and money for economically stretched police forces.

These decision making processes are equally important to law enforcement agencies and police organisations. Monitoring public

interactions through pattern recognition in data and semantics collected from the public (Cooke & Sturges, 2009), and systematically triggering decision making accordingly, are arguably even more critical for police organisations. A recent example from the Haiti earthquake crisis of 2010 can showcase how social media plays a vital role in critical situations. When a flight carrying humanitarian relief to the Haiti earthquake casualties was delayed in the skies over Port-au-Prince, tweets and re-tweets brought the situation to the attention of the U.S. Air Force in command of the capital's airport, who responded by a tweet that they were now aware of this (Della Cava, 2010).

Social media platforms may not have been particularly designed for communicating with the public, monitoring trends and gathering intelligence. However, the ways in which the use of the Internet and the WWW have evolved in the last two decades, have gone beyond the purpose it was originally designed for (Auer, 2011). From a policing perspective, they have enabled different approaches to be explored in attempts to keep contact with communities, provide and elicit information, and ensure that the public feel safe and secure. The potential of using social media for police interaction with the public has not been fully investigated, and research has mainly been limited to a small number of countries. There is little knowledge about the use of social media for policing in the Middle East, apart from noting that there are very high penetration rates for social media across the region (Al-Dosari, 2016). This indicates that it is an area worth investigating. It is

clear that there are benefits to using social media, as can be seen in the experiences of the USA, but the UAE has different cultural expectations and these need to be put into perspective. The effectiveness of social media in law enforcement may need to be viewed in a different way, and this is an area this study sets out to explore.

2.5 Summary

The review of the literature has shown a paradigm shift in the Internet with the introduction of Web 2.0 technologies and social media platforms. The main features of this paradigm shift are summarized in Table 2.2.

Table 2.1: Summary of findings from the literature

	Paradigm Shift	
	Web 1.0	Web2.0
Interaction	Mostly broadcasting one-way	Interactive two-way
Customisation	Mostly one view fits all	Customised content
Power	Organisations have control	Power is more shared between organisations and users
Participation	Less participation from users	More participation from users
Intelligence	Less knowledge of users	More knowledge of users
Knowledge sharing	Less sharing of knowledge	More sharing of knowledge

Based on the paradigm shift observed in the literature review, social media are defined for the purpose of this research as:

online communication platforms that enables users to connect through various devices and empowers them to interact and communicate using various types of content using Web 2.0 technologies.

The changes caused by social media have been offering police organisations – among other government entities – both opportunities for:

1. Intelligent policing: through transforming the ways they communicate and interact with the public and
2. Shared governance: through enabling participation in decision making processes.

Intelligent policing is facilitated by more interactive, two-way communication. Using Twitter, for example, police organisations have the opportunity to communicate with communities and members of the public in real two-way communication than was possible before social media. Through empowering the public to have their voices heard and encouraging them exchange knowledge, police organisations not only will improve their understanding of communities and increasing public trust and support, but also will be able to collect intelligence necessary for effective decision making.

Shared governance is created by decentralising the decision making process. Through decentralisation of decision making, the police can empower members of the public to participate in making decisions that are directly relevant to them and their communities. Social media can play a vital role in shared governance through cycles of monitoring, analysing and acting on matters of importance to individuals and communities.

Nevertheless, social media have also been exposing challenges in defining the connections and methods used in their communications and interaction through this media. Although the increasing dynamics of using social media arguably suggests that they are likely to continue to be the preferred media for communication and interaction among organisations and the public and communities, the concept of social media is still in its infancy and therefore needs to be more understood in terms of its strengths, weaknesses, opportunities and threats. This is especially true of high context cultures, which may be slower to accept communication modes that do not include face-to-face interaction. In this study, the focus is in the UAE, which is a high-context culture, and the challenges of effectively using social media as a communication channel need to be explored. As the literature indicates, there is a limited amount of information on the effect of social media and its impact on interaction between the police and the public. It is even more limited within the context of the Middle East, and this research seeks to provide more knowledge on an important but rather neglected topic.

From the literature reviewed it is clear that the nature and types of communication between the police and public in the UAE must be understood in order to be able to develop a framework for using communication with the public to support effective decision making. This reinforces the research problem discussion around the changes in the environment the police is working in and in the relationships with the communities and the public. The understanding of these issues requires first to identify the main areas that shapes the communication interface between the UAE police on one side, and the communities and members of the public they serve on the other, which will focus the scope of the research and the contribution to theory and practice. Therefore, the next chapter examines controversies in present social media communication practices by the UAE police vis-à-vis the literature, before setting the research strategy and methodology accordingly.

Chapter III – Research Design and Methodology

This chapter discusses the research design, and the selection of the research methodology in order to guide the investigation towards addressing the research question identified in Chapter I: *What practical framework that can be used for using social media as a communication instrument in support of decision making processes in police organisations?*

The chapter starts by discussing the research philosophy and methodical choice based on the research onion conceptual framework. Then the chapter moves to discuss the research techniques and processes, and their underpinning research methodology, that are used for developing and evaluating the proof of concept demonstrated in Chapter IV. Finally, the chapter highlights the techniques and processes for data collection and analysis.

The findings of the data analysis are then used to propose a framework for using social media as a communication instrument in supporting the decision making process in governmental organisations, as will be discussed in Chapter V.

3.1 Research Philosophy and Methodical Choice

The aim of this research is to develop a practical framework for using social media as a communication instrument in supporting the

decision making process in governmental organisations. Therefore, the philosophy underpinning this research design is primarily pragmatic, as per the research onion conceptual framework provided by Saunders and Tosey (2013), illustrated in Figure 3.1.

However, since the success of the communication framework relies on the engagement of communities and members of the public in the UAE, it is essential for the proposed proof of concept to be evaluated by investigating the views and expectations of the public (Van den Born *et al.*, 2013; Yilmaz, 2013). For example, Yilmaz (2013) posits that for building an effective policing framework in a particular community, it is essential to match it with the expectations of that community. Therefore, the research draws on from the views and interpretations of the public on the proof of concept, and hence also takes an interpretivist approach. These two research philosophies are not contradicting and can be used together particularly in Information Systems research (Goldkuhl, 2012).

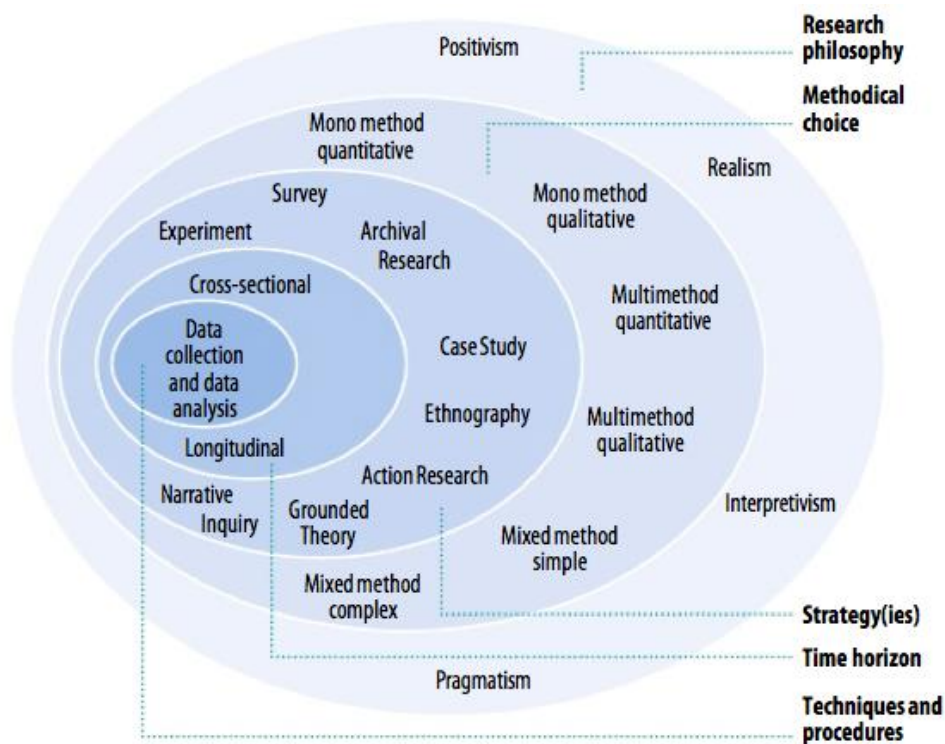


Figure 3.1: Research Onion Conceptual Framework (Saunders & Tosey, 2013)

The research question is explorative in nature as it investigates the concepts that should be considered in developing a practical framework for using social media as a communication instrument in supporting the decision making process in governmental organisations. The methodical choice, therefore, should be suitable for addressing the explorative type of the research question (Yin, 2013). Accordingly, the methodical choice is based on using a qualitative methodology to address the explorative nature of the research question through collecting and analysing qualitative data of the views and interpretations of the public. Qualitative methodologies offer this research more in-

depth understanding of the phenomena under study than quantitative methodologies because they are based on collecting qualitative type data through engaging with participants in more in-depth interviews and conversations.

3.2 Research Methodology

The research has considered qualitative research methodologies such as Grounded Theory, Phenomenology, Ethnography and Qualitative Research analysis. the Grounded Theory methodology appears to be a good match for this type of research as it aims at developing a framework from practice using a proof of concept, rather than evaluating an existing theory. The Grounded Theory methodology particularly stood out as a research methodology because it offers researchers – especially novice researchers – systematic step-by-step guide into collecting and analysing data and formulising the emergent theory from data in practice, rather than testing pre-determined hypotheses.

The Grounded Theory methodology, therefore, is a suitable option for conducting this research because it is designed for the purpose of generating theory from practice (Glaser & Strauss 1967; Strauss & Corbin, 1990, 1998). This research adopts this methodology as the authors offer a systematic approach for uncovering and articulating theory that emerges from data collected from practice. The systematic

approach comprises provides a step-by-step guide for conducting grounded theory research based on four main processes: (1) analytical sampling, (2) data collection, (3) data analysis, and (4) verification and validation (Strauss & Corbin, 1990, 1998). These processes are interconnected and iterative (Strauss & Corbin, 1990, 1998), as will be discussed in the next sub-sections.

3.2.1 Analytical sampling

Based on the Grounded Theory methodology, this research uses analytical (theoretical) sampling as opposed to statistical sampling that is often used in quantitative methodologies. Whereas statistical sampling aims at achieving accurate statistical data on the distributions of variables within a population, analytical (theoretical) sampling aims at regenerating or increasing emergent concepts by finding extremes along some dimension in a way that will extend the theory (Meredith, 1998).

The unit of the data collected in this research is the emergent concept and not a respondent (Glaser & Strauss, 1967). Therefore, this research does not define a research population nor a sample frame, as it is not required in a grounded theory based research. Instead, the research uses “comparative analysis” to identify individuals, places, and events to maximise chances for discovering variations in the concepts throughout the research phases as per the grounded theory methodology (Strauss & Corbin 1998). The analytical sampling is therefore implemented by selecting situations of engagement with the

Twitter accounts and identifying engaged users who have the ability to contribute to the discovery of theory (Creswell, 1998).

Analytical sampling continues in this research until “theoretical saturation’ is reached, that is when data collected does not lead to the discovery of new concepts (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Therefore, the number of users to be interviewed is not identified at the beginning of the research, but rather at the end of the research. In this research, theoretical saturation has been reached after 53 interviews and 5 focus groups, as will be discussed in Chapter V.

3.2.2 Data collection

The data collection is based on interviews to collect qualitative data of the views and interpretations of the public. The research uses semi-structured interviews to avoid criticism associated with in-depth interviews, particularly related to being lengthy and hence risk diverging from their focus, in addition to issues with their reliability and researcher bias (Robson, 2011; Saunders *et al.*, 2011). Fully structured interviews are not suitable for this type of research as it arguably hinders the emergence of concepts from the data (Glaser, 1992).

3.2.3 Data analysis

This research uses data analysis techniques from the Grounded Theory methodology to explore concepts in narratives from the first qualitative data collected. After the first set of concepts emerge from the first narrative, the research uses “comparative analysis” to compare

concepts emerging from subsequent narratives in qualitative data collected, similar to data comparison in statistical methods (Glaser & Strauss, 1967). Comparative analysis allows the researcher to either confirm or adjust concepts emerging from previous narratives. This process continues until theoretical saturation is reached, that is when data collected does not lead to the discovery of new concepts (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

The analysis of data in this research follows three levels of data coding techniques as offered by Strauss and Corbin (1990, 1998):

1. Open coding
2. Axial coding
3. Selective coding

The following sections discuss the three levels of data coding techniques in more detail.

3.2.3.1 Open coding

At the first level – open coding, the research uncovers emergent concepts, their properties, and dimensions from narrative of qualitative data. Concepts are significant occurrences that stand out in the narratives of the respondents, while properties and dimensions further describe the concepts. This research started by transcribing the first set of interviews and highlighted terms repeated and/or emphasised by the participants. When the terms started repeating in following interviews, the research started highlighting concepts in the

interviews and focus groups systematically and only transcribing the quotes that points at these concepts or further describe or explain them (properties and dimensions).

3.2.3.2 Axial coding

At the second level – axial coding, concepts are grouped into categories according to similarities in their properties and dimensions. The grouping of concepts into categories paves the way for integrating the uncovered theory using selective coding. This research put concepts that are addressing a similar area together. For example, when concepts and their properties and dimensions were addressing an overall communication strategy they were put under the category ‘communication strategy’ and when concepts and their properties and dimensions were addressing the governance of communication again they were put under the category ‘communication governance’. This process has undergone several iterations until the concepts under a group formed a coherent whole together, as will be demonstrated in Chapter IV.

3.2.3.3 Selective coding

At the final level – selective coding, the emergent theory is described in a suitable form (e.g. a model, framework, or a set of propositions). The theory is refined through the next cycles of coding until theoretical saturation is reached. This research captured the emergent concepts in the form of ten propositions to be addressed when

developing a framework for using social media as a communication instrument in supporting decision making in police organisations. This will be discussed in detail in Chapter VI.

The three levels of coding represent the process of transforming the data into theory Strauss and Corbin (1990, 1998).

The research analysis uses the terms concepts, properties, dimensions, and categories to present the findings of the coding as per the Grounded Theory methodology (Strauss & Corbin, 1990, 1998). Each concept is a “labelled phenomenon” that serves as an abstract representation of a significant idea, thought, action, or event that stands out in the narrative of qualitative data. Properties are the characteristics that explain each concept, while dimensions are the range of variations that a characteristic can have.

The concepts are then organised under main categories. A category is a grouping of similar concepts on the level of their properties and dimensions (Strauss & Corbin 1990, 1998). In this research, the titles used for the categories are deduced from the narratives of qualitative data. The categories are then integrated and refined to present the theory.

The research used colour coding to present the **CONCEPTS** and their ~Properties and ≤ Dimensions ≥ as well as the {CATEGORIES} as follows:

- **CONCEPT**: is presented in bold red

- **~Property**: is presented in blue with an 'approximately equal' sign in front of it to indicate that this is a characteristic of the concept.
- **≤ Dimension ≥**: is presented in green with a 'range' sign next to it to indicate that this is the range of the property of the concept.
- **{CATEGORY 1}**: is presented in dark red in upper case and between curly brackets to enclose the similar concepts together.

The colour coding was used to make it easier for the reader to distinguish between the Grounded Theory methodology coding elements.

The role of the researcher is to uncover a theory that covers and explains the majority of the emergent concepts and not provide a holistic description of the phenomena or to know the whole field under study (Strauss & Corbin, 1998). Glaser and Strauss (1967) explain that it is not reasonable to expect the researcher to know the phenomena or the field under study better than those stakeholders involved in it.

3.2.3 Verification and validation

This research uses verification and validation to assess the accuracy and reliability of both the research process and the collected data, in a way that complies with information systems research (Roache, 1998; Oberkampff & Trucano, 2002). Through verification, the research assesses the accuracy and reliability of the process used to identify, collect and analyse the data, while through validation, the research

assesses the accuracy and reliability of proof of concept in obtaining the intended data to address the research question.

According to Strauss and Corbin (1990, 1998), verification and validation are integral in the Grounded Theory methodology lifecycle. Verification is embedded in this lifecycle from theoretical sampling, data collection, to data analysis. Verification starts by assessing that theoretical sampling and selection of interviews fit by providing data that is useful in addressing the research question. Verification then continues through data collection then assessing that the proof of concept and data collection are yielding data that is leading to insights into the research problem. Then verification continues during data analysis assessing that the concepts and categories are leading to grounded theory.

In this research, verification started with the pilot interviews to assess that the theoretical sampling is working in that it is providing data that can lead to uncovering concepts in the design of a framework for using social media as a communication instrument to support decision making in police organisations. Verification led to defining the scope of the research population, discarding two groups of respondents (the under 18 and over 65), as will be discussed in Chapter IV. Verification then continued throughout the data collection and analysis phases. During data collection the research has been continually assessing that data collected from the interviews and focus groups are providing

concepts in relation to the research question. This verification has been guiding the theoretical sampling of the next group of interviews and focus group. Finally, verification during data analysis assessing has been assessing the emergent concepts and categories and their likely contribution to developing the framework.

Validation is also embedded in the process of data analysis by ensuring that the concepts and their properties and dimensions fit the data collected through grounded theory techniques such as comparative analysis. This is achieved through two techniques in Grounded Theory methodology. The first is by checking back the emergent concepts and their properties and dimensions against the narrative of qualitative data from which they emerged in the first place (Strauss & Corbin, 1990, 1998; Creswell, 1998). The second is by taking the emergent theory, its concepts, and categories back to the respondents to check the accuracy of the emergent theory against their views and perceptions on the phenomena under study (Strauss & Corbin, 1990, 1998).

In this research validation has been continually used to assess that the emergent concepts, and their properties and dimensions, fit each of the narratives collected in the interviews and focus groups that led to it. This has ensured that the data from interviews and focus groups has been accounted for, and at the same time the emergent concepts, and their properties and dimensions are all represented in the narratives.

3.3 Summary

This chapter discussed the selection of the research methodology, which will guide the investigation towards addressing the research question.

The chapter started by discussing the selection the research philosophy and the methodical choice underpinning the research. The research adopts a philosophy based on both pragmatism to explore a practical framework for using social media as a communication instrument in supporting the decision making process, and interpretive drawing on from the views and interpretations of the public on the proof of concept. The methodical choice, therefore, was based on using a qualitative methodology to address the explorative nature of the research question through collecting and analysing qualitative data of the views and interpretations of the public.

The chapter then moved to discuss the selection of a suitable methodology to be used in the design of data collection and analysis techniques and procedures for evaluating the proof of concept. The research selected grounded theory as it aims at developing a framework for using social media as a communication instrument to support decision making at UAE police from practice using a proof of concept. In particular, the research follows a systematic approach based on the Grounded Theory Research method offered by Strauss and Corbin (1990, 1998) for uncovering and articulating theory that emerges from data

collected from practice. The systematic approach comprises provides a step-by-step guide for conducting grounded theory research based on four main processes: (1) analytical sampling, (2) data collection, (3) data analysis, and (4) verification and validation.

Accordingly, this chapter set the scene for the data collection and analysis by developing the proof of concept and identifying the processes and techniques for the data collection and analysis. The next chapter will describe how the processes and techniques for the data collection and analysis will be implemented for the evaluation of the proof of concept.

Chapter IV – Proof of Concept

The purpose of this chapter is to design a proof of concept, towards addressing the research question identified in Chapter I: *What practical framework that can be used for using social media as a communication instrument in support of decision making processes in police organisations?*

In order to develop a practical framework for using social media as a communication instrument in supporting decision making processes in police organisations, a proof of concept is designed and evaluated through data collected on experiences of communities and members of the public interacting within this proof of concept, as discussed in Chapter III.

The chapter starts by defining what is a “proof of concept” in the context of this research? Then it moves to compare and contrast models and practices related to the use of social media as a communication instrument at the UAE police based on observations in practice, with models, trends and practices of other police organisations discussed in research based on the review of related literature presented in Chapter II, and accordingly define areas for investigation in the proof of concept.

4.1 Proof of Concept

A proof of concept is an experimentation that is built to test conceptual ideas, models or frameworks, before fully implementing them in practice. A proof of concept uses a simulation of situations, experiences or structures on a smaller scale from those that would be potentially implemented if results from the proof of concept show that it is feasible. The value from a proof of concept, therefore, is to test the feasibility of ideas, models or frameworks before committing resources to full implementation.

A proof of concept has been used to test conceptual ideas, models and frameworks in research in various fields from medicine to business to engineering and information sciences (see for example: Gulbranson and Audretsch, 2008; Janiesch *et al.*, 2012; Foster *et al.*, 2016; Lanza *et al.*, 2016). Similar to this investigation, for example, Janiesch *et al.*, (2012) used a proof of concept to practically evaluate an innovative conceptual architecture in information systems.

In the context of this research, the proof of concept aims at investigating an improved framework for using social media as a communication instrument in supporting decision making processes at the UAE police. The proof of concept is developed based on a comparison between relevant models, trends, and practices in the literature with models and practices currently in use at the UAE police, in order to demonstrate its feasibility in engaging members of the public and communities in

communication towards supporting more effective decision making in police organisations.

Thus, the purpose of the proof of concept in this research is to simulate – on a smaller scale – a social media communication experiment for improved decision making.

4.2 Comparison Between Present Practices at UAE Police and Related Literature

This section compares and contrasts present models and practices at the UAE police in using social media as a communication instrument to support decision making processes, with models, trends and practices at different police organisations worldwide reported in the literature, in order to inform the design of the proof of concept. Professional observations in practice are used to identify the present models and practices at UAE police related to how they interact with communities and members of the public in UAE using social media and how these practices support their decision making processes. At the same time, models, trends in other police organisations from different countries are captured from related literature discussed in Chapter II. The output is a set of investigation areas to be simulated and evaluated using the proof of concept.

Observations of UAE police’s social media models and practices with models, trends and practices arising from the review of the

literature are grouped under two main areas: *communication approach*, and *communication governance*. The *communication approach* compares the ways the UAE police is interacting with communities and members of the public, particularly how information is communicated between police organisations and the communities and members of the public through their use of social media at present, with the communication approaches used by other police organisations in other countries, as discussed in the literature review. The *communication governance* compares the decision making structures and processes implemented by the UAE police in their information exchange with the communities and members of the public at present with models, trends and practices for using information to support decision making processes identified in the related literature.

4.2.1 Communication approach

The UAE police has full presence on social media through the pages of the Ministry of Interior (MOI) including Facebook (MOI UAE), and Twitter (@moiuae), as shown in Figures 4.1 and 4.2 respectively. At present, only few of the central police headquarters in the seven emirates have their own Facebook pages (e.g. Dubai Police, Sharjah Police, and Ras Al Khaimah Police Headquarters) and Twitter pages (e.g. Dubai: @DubaiPoliceHQ, Sharjah: @ShjPolice, Ajman: @AjmanPolice, and Ras Al Khaimah @rakpoliceghq). Moreover, only Abu Dhabi police has additionally a Twitter account for traffic (@ad_traffic).



Figure 4.1: MOI UAE Facebook Page

Observations in practice reveal that the frequency of Tweets from the UAE police significantly exceeds the frequency of posts on Facebook. While the central MOI UAE communicates between 60-90 tweets per week on Twitter, they communicate only between 10-20 posts per week on Facebook. The variation is even wider when it comes to the social media channels of the central police headquarters in some of the Emirates. For instance, Dubai Police communicates between 50-80 tweets per week on Twitter, whereas they communicate only few posts per week on Facebook.

These observations indicate that the MOI and central headquarters of few of the emirates headquarters, have presence on

social media in general. However, there are no presence for local police units or community police. In addition, the MOI and central police headquarters in the Emirates are more inclined to use Twitter – rather than other types of social media – to communicate with communities and members of the public. Therefore, this research focuses on investigating Twitter as a communication instrument to support decision making processes at UAE police.



Figure 4.2: MOI UAE Twitter Page

In both cases, there is also little or no sign of customising communication to the different communities in the UAE, or through specific topics of interest, by the UAE police or by the individual police units of the Emirates.

Firstly, these observations indicate that the central headquarters of the UAE police, as well as the individual police units in some of the Emirates, use social media – particularly Twitter – to communicate with communities and members of the public in mass communication, similar to the use of mass media such as TV, radio, newspapers, etc.

The use of social media as a mass communication instrument contrasts with models, trends and practices in other police organisations in different countries, as reported in the literature review. Police organisations – among other governmental organisations – in other countries such as the UK and the US use social media as a way of communicating with communities and members of the public in a more customised way. Social media provide organisations with opportunities not only to broadcast or share information with the public and communities, but more importantly to communicate with communities and members of the public more effectively in a way that is more convenient to these communities and individuals, and that enables them to access, understand and provide feedback on the information provided by governments (Dorris, 2008; Chun *et al.*, 2010; Kuzma, 2010).

Based on the above comparison, it is important for police organisations to weigh benefits from customising communication with communities and members of the public, and decide whether it is better in their contexts to use social media as a mass communication or as more customised communication instrument. Thus, the social media proof of

concept will develop different communication platforms for different communities to evaluate the impact of customising communication on the interaction between the police, the communities and members of the public.

Secondly, observations from investigating the social media used by the MOI and central headquarters of some of the emirates show that the communication approach with communities and members of the public is based on broadcasting information (i.e. one-way communication). For example, the MOI UAE Facebook account shown in Figure 4.1 is used to broadcast information from the police to the public (e.g. information about police services in the UAE, information about the traffic, etc.) with lack of sign on any significant interactions. Similarly, Abu Dhabi police's Twitter account for traffic (@ad_traffic) is used to broadcast information one-way from Abu Dhabi police to the public in the Emirate with lack of sign on any significant interactions with members of the communities, as shown in Figure 4.2.

In contrast, the literature review has discussed a paradigm shift in the Internet as a communication medium, with the introduction of Web 2.0 technologies and social media platforms. The principle underpinning the paradigm shift is in the change in power from the organisation to Internet users, allowing for a change in how the Internet is used as a communication medium; moving away from a one-way communication medium, where Internet users are generally passive

recipients of information (much like with other more conventional types of media), to interactive two-way communication media, where Internet users are empowered to create, share and communicate information at their convenience.

The use of social media merely to broadcast information, therefore contrasts with findings from the literature review relating to the opportunities offered by social media for interactive two-way communication. Social media such as Facebook, Twitter, YouTube, Instagram, and others, facilitate multiple-user interaction and empower people to create, share and communicate information (Hansen *et al.*, 2010; Kuzma, 2010; Tang & Liu, 2010; Auer, 2011; Bertot *et al.*, 2012; Picazo-Vela *et al.*, 2012; Siamagka *et al.* 2015). Accordingly, communication using these platforms of social media is more interactive, through allowing two-way or many-to-many communication.

Based on the above comparison, it is important for police organisations to take into consideration the value from interactions with communities and members of the public they serve, and whether it is feasible in their contexts to engage in two-way communication on their social media platforms. Therefore, the proof of concept will encourage more interactions to test the impact of two-way communication on the participation of communities and members on the Twitter platform.

Thirdly, the lack of two-way communication between the police and the communities and members of the public they serve also

indicates that the police is missing on an opportunity to better understand these communities and to have better intelligence (i.e. more knowledge as opposed to information) about the issues they are facing and its contexts, and consequently the ability of the police to make more informative decisions and hence better serve these communities.

As discussed in the literature review, knowledge exchange between two or more parties through communication is an integral component in making important decisions (Ashurst *et al.*, 2012). Unlike other more traditional media, micro blogging (e.g. Twitter) offers Internet users the ability to exchange knowledge, share views and opinions in real time (Agarwal *et al.*, 2016; Auer, 2011). The UAE police, therefore, is missing on the opportunity of having knowledge communicated to them by the communities and members of the public they serve, through real two-way communication interactions.

Knowledge exchange is particularly critical for decision makers not only to understand the situation in hand, but also to understand and take into consideration the cultures of the different communities and cultures. This is even more critical in the UAE due to the high percentage of expatriates from different nationalities (84% of the population of around 10 million), and hence different cultures living in many communities (Emirates247, 2013). Without knowledge sourced from a variety of different interactions, decision makers are more unlikely to have a full picture of what needs to be done.

Based on the above comparison, it is important for police organisations to balance the benefits from empowering the communities and members of the public to exchange knowledge. Therefore, the proof of concept will encourage more knowledge exchange through two-way communication to test the impact on the quality of information for supporting the decision making process at the UAE police.

4.2.2 Communication governance

Firstly, observation in practice of social media presence of the MOI and central police headquarters in the Emirates show that only few members of the small number of account followers – on both Facebook and Twitter – respond and/or share the posts and tweets. Lack of significant interactions between the UAE police and the communities and members of the public raises issues of trust.

These observations are in line with related literature. Research concerned with interactions between the police and the public has shown that police organisations in general have been facing challenges related to lack of trust in media among the public in general (Mawby, 2010). Researchers and practitioners such as Cooke and Sturges (2009), Copitch and Fox (2010), and Chu *et.al* (2016) have pointed at the importance of trust in communication between the police and communities and members of the public, as discussed in Chapter II.

Trust can arguably be improved through engaging with communities and members of the public, and social media are

increasingly portrayed in the literature to be providing suitable solutions for this. For example, Picazo-Vela *et al.* (2012) argue that social media have the potential to increase trust through empowering and engaging communities and members of the public in what government organisations are doing, and enabling them to collaborate and participate, by giving them the ability to share their feedback and ideas about the services provided by government organisations. This arguably applies to police organisations, where social media offer additional ways to supporting decision making processes, through facilitating activities such as intelligence gathering, analytics, information model development, collaborative support, alternative assessment and decision application. However, building trust with communities and the public may not be without risk in some contexts, such as that of the UAE, where a lack of comprehensive legislations for privacy may deter collaboration and interaction between the police and the public.

Changes caused by social media, nevertheless, is offering police organisations – among other government organisations – both opportunities to transform the ways they communicate and interact with communities and members of the public, and challenges in defining the connections and methods used in their communications and interaction through such media. Social media offer potential value to police organisations, in terms of promoting accountability and transparency, engaging the public, and increasing trust in government organisations through empowering individuals and giving them a voice in

issues that matter to them. Moreover, Social media have been impacting particularly on the area of communication with communities and members of the public in the process of collecting intelligence for supporting more effective decision making processes, through eliminating intermediaries such as journalists, editors and media agencies. This has allowed for communication to happen directly from source (i.e. government organisations) to destination (i.e. members of the public and communities), and hence it is increasingly becoming the preferred medium for communication, collaboration and exchange of information, views and opinions in ways that influence many fields of public life.

Through social media, therefore, police organisations have the opportunity to encourage different communities and members of the public to interact through these two-way communication media, and exchange concerns and views, based on which police organisations can improve their understanding and services to these communities (Cooke & Sturges, 2009).

Therefore, the social media proof of concept needs to investigate the views of people in ways by which the public can use media that would offer convenience for them (Heverin & Zach, 2010; Baker & Hyde, 2011; Crump, 2011) and with which they feel they are confident of their privacy.

Secondly, observations in practice show that the decision making process at the UAE police is achieved through the central headquarter unit in each of the Emirates, and all report to the MOI, especially for matters related to the country in general (e.g. matters of national security). Intelligence is gathered from different sources and sent through the Emirates' central headquarters, to the MOI, which in turn analyses the intelligence provided and sends decisions for implementation to the Emirates' central headquarters. When decisions are made at the MOI, social media is mainly used to broadcast some of these decisions in a mass communication manner. This reflects the use of social media as a mass communication instrument, as discussed in the previous section.

As discussed in the literature review, however, police organisations are experiencing increasing challenges as they are operating within a constantly changing environment (Van den Born et al., 2013; Yilmaz, 2013). Therefore, cooperation between police organisations and the communities and members of the public they serve, is becoming ever more critical. Yet, centralisation of the decision making process risks limiting communication between governmental organisations, and communities and members of the public (Ruth-McSwain, 2011; Meijer & Torenvlied, 2014), and hence input to the decision making process from communities and members of the public, and in the case of the UAE input from local and community police units.

In comparison decentralisation of the decision making process has the potential of improving communication with the communities, and members of the public through a process of participation; involving, informing, consulting, engaging, collaborating, and empowering (Coats & Passmore, 2008). Through decentralisation of the decision making process, communities and members of the public are encouraged to cooperate with the police through knowledge exchange, while local and community police units are enabled to participate in decisions relevant to their areas.

Accordingly, the UAE police should weigh potential opportunity loss from a lack of empowering communities and members of the public, as well as local and community police units through more collaborative decision making. Allowing for participation in the decision making process has the potential of facilitating the work of the police through better understanding of situations as they unfold. Social media, like face-to-face communication, allow for such collective collaboration. As discussed in Chapter II, it is more and more possible for both decision-makers and experts to connect and share experiences on-demand online (Bullas, 2010).

Therefore, the social media proof of concept needs to investigate whether centralisation of decision making processes is more effective, or whether decentralisation would be more effective, and what opportunities social media provide in this respect.

Thirdly, social media offer police organisations a potential value from creating intelligent environments where trends are monitored in real time and decision making processes are triggered automatically. This means that social media can facilitate and advance the whole decision making process, saving time and money for often financially stretched police budgets. Monitoring public interactions through identifying change in behaviours of social media users through word semantics and terms they use (Cooke & Sturges, 2009), and systematically triggering decision making accordingly, are arguably even more critical for police organisations nowadays. Priority is given to openness and speed, rather than security, and this is some distance away from traditional policing (Crump, 2011).

In connection with the creation of intelligent environments in terms of the communication governance, the literature review has revealed a thread around 'intelligent policing' (Ratcliffe, 2010; 2016; International Association of Chiefs of Police, 2014). The challenges of global terrorism, especially since the 9/11 attacks, have shifted perceptions of police organisations in various countries to start engaging more with communities and members of the public in order to gain intelligence to prevent acts of terrorism (International Association of Chiefs of Police, 2014). Social media offer opportunities for police organisations through supporting more intelligence-led policing

(Ratcliffe, 2010, 2016). However, intelligence-led policing needs better ways for sharing knowledge between police organisations, communities, and members of the public (Sayre, 2010; Gharis *et al.*, 2014), as discussed earlier in the communication strategy section.

Therefore, the social media proof of concept needs to investigate whether empowering communities and members of the public would lead to more effective decision making.

4.3 Developing a Proof of Concept Using Twitter

The review of the literature show a lack of consensus on what constitutes a practical framework for using social media as a communication instrument in supporting decision making processes in organisations, specifically in police organisations. There has been debates in research and practice that are questioning the success of decision making frameworks in realising their potential especially in light of opportunities offered by social media in supporting decision making (Burstein and Holsapple, 2008b; Alencar *et al.*, 2010; Antunes and Costa, 2012; Ratcliffe 2016).

In research frameworks are criticised for being ad hoc and hence lacking clarity of rationale and consistency in the decision making process, while others are criticised for adopting communication approaches and/or communication governance that were suitable for

traditional media, and hence being restrictive and slow (Alencar *et al.*, 2010).

In practice, police organisations in many countries worldwide such as in the UK, have been implementing reforms and/or improvements to embrace changes in their environments (Ratcliffe, 2010, 2016). Communication is one of the critical elements of such reforms, as knowledge exchange is key for decision making processes, especially at police organisations, as the quality of the intelligence upon which decisions are made is crucial in decision making. Therefore, police organisations are interested in identifying a practical framework for harnessing the power of social media in engaging communities and members of the public in knowledge exchange to support decision making processes.

The comparison and contrast discussed above reveal differences between current models and practices at the UAE police and models, trends and practices at other police organisations, as reported by researchers and practitioners in related literature. Investigating these differences is useful for identifying the areas for investigating a practical framework for using social media as a communication instrument to support decision making in police organisations. These differences do not necessarily mean that police organisations have to change their framework for using social media as a communication instrument to support their decision making process. Socio-cultural factors could

potentially be playing a role in the suitability of the communication approach and/or the communication governance adopted by police organisations in any country. Therefore, the UAE police – among other police organisations– should be balancing benefits from changes to their communication strategies and communication governance related to their use of social media in supporting decision making, with their contexts and the cultures of the communities they are serving.

4.4 Defining Areas for Investigation Using the Proof of Concept

Following from the above discussion, this investigation proposes developing and evaluating a proof of concept to bring insights into areas that need to be considered when using social media as a communication instrument to support decision making in police organisations. The proof of concept focuses on two main areas of investigation, as identified by the comparison between observations in practice of present models and practices at the UAE police related to their use of social media to communicate with communities and the public, and how these practices support their decision making processes, with the models, trends and practices discussed in related literature. The two areas and investigation topics are illustrated in Figure 4.3.

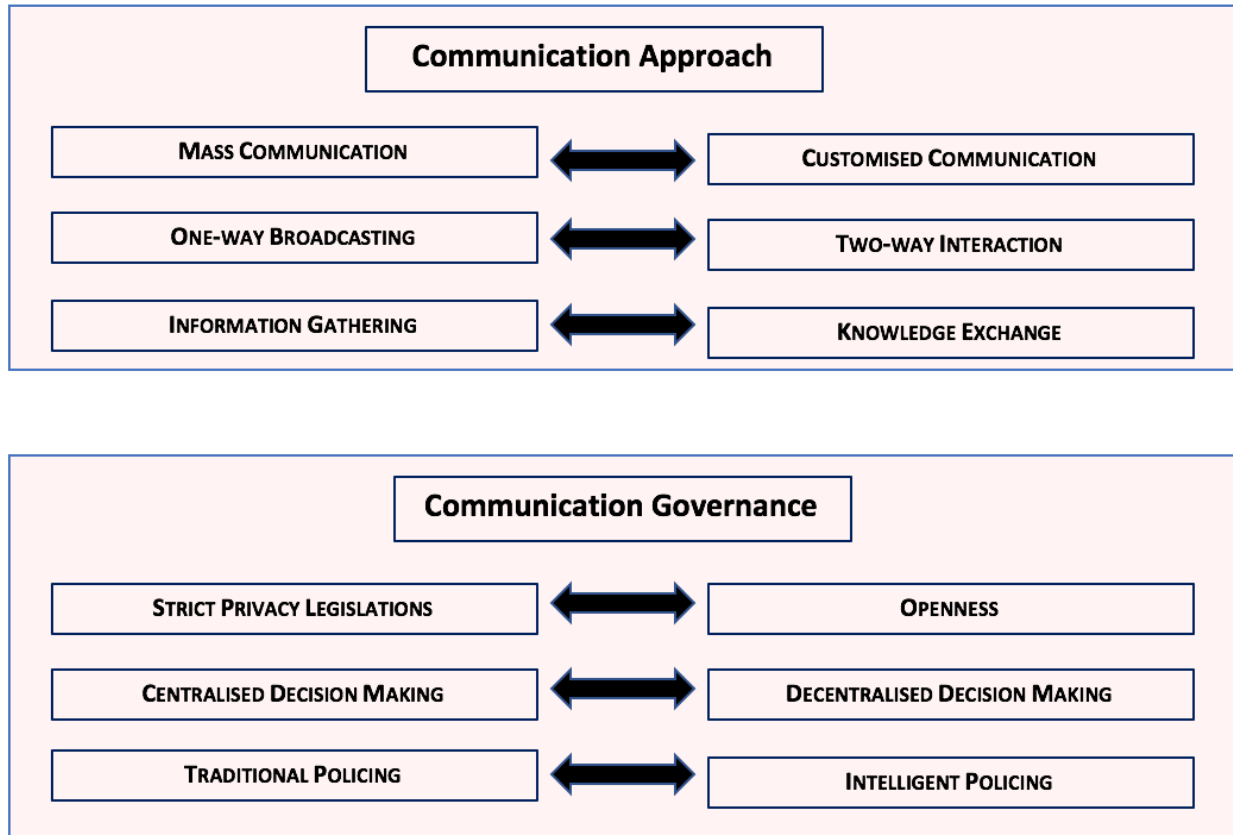


Figure 4.1: Areas for investigation using the proof of concept

As illustrated in Figure 4.3, the proof of concept will investigate six main areas categorised under:

1. **Communication approach:** the proof of concept will investigate the following areas in the communication approach:
 - a. Mass vs customised communication: the proof of concept will use multiple Twitter accounts to customise communication according to neighbourhood and topic, in contrast to the current mass communication approach used by the UAE police and test the user views on the difference between the two approaches
 - b. One-way broadcasting vs two-way interaction: the proof of concept will allow and encourage more interactions with the users on the Twitter accounts, in contrast to the current one-way broadcasting communication approach used by the UAE police and test the user views on the difference between the two approaches
 - c. Information gathering vs knowledge exchange: the proof of concept will test the users' views on the notion of knowledge exchange and users' preparedness to share knowledge, in contrast to the current information gathering approach used by the UAE police

2. **Communication governance:** the proof of concept will investigate the following areas in the communication governance:
- a. Strict privacy legislations vs openness: the proof of concept will test the users' views on the notion of privacy and users' preparedness to participate on social media sites of the UAE police, in contrast to the current governance approach using strict privacy legislations
 - b. Centralised vs decentralised decision making: the proof of concept will test the users' views on the notion of decentralisation of decision making and the participation of communities as well as local and community police in the decision making process, in contrast to the current centralised decision making governance approach used by the UAE police
 - c. Traditional vs intelligent policing: the proof of concept will test the users' views on the notion of intelligent policing and its potential value, in contrast to the current traditional approach used by the UAE police

The proof of concept will investigate the above areas illustrated in the figure 4.3 using Twitter accounts. As discussed in Chapter I and earlier in this chapter, Twitter is significantly used by the MOI as well by some of the Emirates police central headquarters. Twitter is the second social media channel used in the UAE (excluding instant messaging channels such as WhatsApp and other instant messengers), with around 30% share of Internet population (preceded only by Facebook with

around 46% share of Internet population) (Statista 2015; Clouds Media, 2016; Global Media Insight, 2016). However, Twitter's growth rate especially among younger generations is higher than Facebook (Al-Jenaibi, 2011). This is arguably due to two main reasons: the increasing number of celebrities and influencers who embraced Twitter, and the security features that Twitter offers to its users such as warnings about unauthorised use and "shielding" to selectively enable others to posts (WPRI, 2009; cited in Al-Jenaibi, 2011). Similarly, Twitter has been used by police organisations in various countries, such as in the UK, as a major means of engagement with the public, given that it is easily accessible (Crump, 2011).

Accordingly, the proof of concept is based on using Twitter as a communication instrument to support the decision making process at UAE police. A selection of screen shots of the proof of concept are presented in Appendix B.

4.5 Summary

This chapter discussed the design of the proof of concept towards addressing the research question.

The models and practices related to the use of social media as a communication instrument at the UAE police based on observations in practice, were compared and contrasted with models, trends and

practices of other police organisations discussed in research based on the review of related literature presented in chapter II.

Accordingly, the chapter identified six main areas for investigation using the proof of concept, presented under two main categories, as illustrated in Figure 4.3. First, the communication approach revealed differences in the ways information is communicated between police organisations and the communities and members of the public they serve through the use of social media. Second, the communication governance revealed the decision making structures and processes implemented by police organisations in their communication with the communities, and members of the public.

Differences between current practices at UAE police and approaches, policies and trends in research and practice have been identified and considered in the development of a Twitter proof of concept, as illustrated in Appendix B. In relation to the communication approach, the proof of concept will investigate the effectiveness of using social media by UAE police as an instrument for mass communication to communicate information to the public using a broadcasting approach with limited interactivity with members of the public. In relation to the communication governance, the proof of concept will investigate the effectiveness of the centralisation of information at the UAE central headquarters. It will examine the extent of intelligence the UAE police is gaining from such engagements in light of present decision making

processes and the level of engagement from communities and members of the public.

The evaluation of this proof of concept with members of the public is set to uncover concepts, principles and propositions to address the gap in the literature and contribute to the body of knowledge, and to provide insights to police leadership and policy makers to design practical models for using social media in supporting decision making processes.

Accordingly, this chapter set the scene for the data collection and analysis by developing the proof of concept and identifying the areas of investigation. The next chapter will describe how the processes and techniques for the data collection and analysis have been implemented, and will discuss the results of evaluating the proof of concept.

Chapter V – Data Analysis

This chapter presents the analysis of the data collected to evaluate the proof of concept, in relation to the two main areas of focus discussed in Chapter III: the communication approach (i.e. the ways information is communicated between police organisations and the communities and members of the public through the use of social media) and the communication governance (i.e. the decision making structures and processes implemented by police organisations in their communication with the communities and members of the public).

The chapter starts with an introduction describing the interviews, the focus groups, and the approach used to present the analysis of the data and findings, followed by a discussion of the emergent concepts organised in five categories namely, Communication Strategy, Communication Engagement, Governance, Communication Privacy, and Intelligent Policing.

5.1 Data Collection and Presentation

Both interviews and focus groups were used to evaluate the proof of concept of the framework for using social media in supporting decision making processes in communication with the public. In total 53 interviews have been conducted in various cities and towns in the

different emirates (Abu Dhabi, Dubai, Sharjah, Ajman in addition to the city of Al Ain and Zayed city in Abu Dhabi). In addition, there has been five focus groups in each of the cities of Abu-Dhabi, Dubai, Sharjah, Ajman and Al Ain. The interviews included 36 males and 17 females, a ratio close to the 2:1 male:female population ratio in UAE (UNDP, 2015). The distribution of expatriates to Emirati nationals is also around 2:1. The age group represented is 18-65 years old, which makes around 79% of the population in UAE. The age group under 18, which represents around 20% of the population was discarded because they are out of the scope of this research. During the pilot research, this young group exhibited unfamiliarity with the issues discussed in this research, and therefore were not able to answer the interview (besides requiring special permissions). The over 65 group, which represents approximately 1% of the population, was discarded after the pilot interviews because they have emphasised that they do not use social media in general and therefore cannot answer specialised questions regarding Twitter interactions with the UAE police.

The analysis of the data uncovered 20 concepts with their properties and dimensions based on Grounded Theory coding (Glaser & Strauss, 1967; Strauss & Corbin, 1990; 1998). Similar concepts have been grouped into five categories. In order to facilitate the presentation of the grounded theory analysis a colour coding was used as described in Chapter III.

- **CONCEPT**: is presented in bold red
- **~Property**: is presented in blue with an 'approximately equal' sign in front of it to indicate that this is a characteristic of the concept.
- **≤ Dimension ≥**: is presented in green with a 'range' sign next to it to indicate that this is the range of the property of the concept.
- **{CATEGORY 1}**: is presented in dark red in upper case and between curly brackets to enclose the similar concepts together.

In addition, to make it easier for the reader, the same colour in the colour coding was used to highlight some words within the quotes that led the researcher to think of a concept, a property or a dimension. Moreover, each quote is referenced by either an 'I' indicating that the quote is by an interviewee or 'FG' indicating that it is by a member of the focus group.

The analysis has uncovered concepts that have been grouped under five categories:

{CATEGORY 1}: {COMMUNICATION STRATEGY}: contains five concepts related to developing a strategy for communication with the public. The concepts are:

1. **CONTEXT DEPENDENT ISSUES**
2. **SIMPLIFICATION THROUGH FILTERING COMMUNICATION**
3. **CUSTOMISATION OF COMMUNICATION CHANNELS**
4. **INFORMATION INTEGRATION**
5. **COMMUNICATION FEEDBACK**

{CATEGORY 2}: {COMMUNICATION ENGAGEMENT}: contains three concepts related to implementing communication engagements with the public. The concepts are:

- 1. TWO-WAY COMMUNICATION**
- 2. BRINGING COMMUNITIES AND POLICE CLOSER**
- 3. COMMUNICATION MOTIVATION**

{CATEGORY 3}: {GOVERNANCE}: contains six concepts related to the governance for communication with the public. The concepts are:

- 1. CONTEXT DEPENDENT DECISION MAKING**
- 2. POWER DISTRIBUTION**
- 3. PARTICIPATIVE DECISION MAKING**
- 4. Shared Decision making Impact**
- 5. MONITORING & CONTROL OF COMMUNICATION & DECISIONS**
- 6. Escalation**

{CATEGORY 4}: {COMMUNICATION PRIVACY}: contains two concepts related to privacy issues in communication with the public. The concepts are:

- 1. MAINTAINING PRIVACY OF PARTICIPANTS**
- 2. Ensuring Privacy**

{CATEGORY 5}: {INTELLIGENT POLICING}: contains four concepts related to developing using intelligent policing in communication with the public. The concepts are:

1. **Knowledge Sharing**
2. **Understanding Phenomena**
3. **Understanding Communities**
4. **Improvement through Intelligent Policing**

The above categories and their concepts will be discussed in detail in the following sections of this chapter.

5.2 {CATEGORY 1}: {COMMUNICATION STRATEGY}

The findings from grounded theory open coding have revealed the following five concepts that relate to the creation of a **{COMMUNICATION STRATEGY}**:

1. **CONTEXT DEPENDENT ISSUES**
2. **SIMPLIFICATION THROUGH FILTERING COMMUNICATION**
3. **CUSTOMISATION OF COMMUNICATION CHANNELS**
4. **INFORMATION INTEGRATION**
5. **COMMUNICATION FEEDBACK**

The above five concepts have emerged from data collected from interviews and focus groups and were grouped under the category **{COMMUNICATION STRATEGY}** based on similarities on the level of properties and dimensions. Each of the concepts will be explained in the next few sections.

5.2.1 [Concept]: Context Dependent Issues

The [CONCEPT]: CONTEXT DEPENDENT ISSUES has emerged from data collected from interviews and focus groups to indicate that the issues communicated by the public on Twitter are contextual (See Appendix A for a more detailed analysis). For example, one of the interviewees has stated that “*each area may have a different issue which they may like to raise it with the police*” (I2). Another interviewee has supported the same concept through suggesting “*customising in each neighbourhood, each area has different issues I suppose*” (I5). From a strategic perspective, these findings indicate that when designing a communication strategy, it is important to take into consideration the context of communication.

The data collected from the evaluation of the proof of concept has revealed that the context is either neighbourhood or geography dependent. The property ~Neighbourhood context has emerged from open coding of the data. For example, a participant from the first focus group has stated that “*some of the phenomena exist in a certain neighbourhood but not in others*” (FG1 I3). Another interviewee has also suggested to “*customise [Twitter] according to different neighbourhoods*” (I2).

The property ~Neighbourhood context has two dimensions that has emerged from the data collected. The first ≤Dimension≥ indicates that the neighbourhood context extends a ≤Range of neighbourhood

phenomena/issues types/sizes≥. For example, a participant in the first focus group has suggested a need to “*understand the type and size of problems*” (FG1 I1). Another participant argued that it “helps in knowing the various problems in different **neighbourhoods**” (FG1 I1). The second **≤Dimension** specifies that the neighbourhood context range in **≤Size of neighbourhood population**≥. For example, a participant in the second focus group has suggested that “*there should be different accounts for different neighbourhoods based on the number of people... and some highly populated neighbourhoods may need more than one account*” (FG2 I1).

The data collected from the interviews and focus groups has also showed that the context is geography dependent as shown in Table 4.1. The property **~Urban/rural context** has emerged from open coding of the data. For example, one of the interviewees has stated that “*I think the police should customise the [Twitter] account depending on the geographic region since every region has different topics of interest*” (I28).

The property **~Urban/rural context** has one dimension that emerged from the data collected as shown in Table 4.1. The **≤Dimension** indicates that the urban/rural context extends a **≤Range of geography phenomena types**≥. For example, an interviewee has suggested that “*the more urban areas could be generalized while the rural areas could be more customised or specific*” (I28).

5.2.2 [Concept]: Simplification through Filtering Communication

Data collected from interviews and focus groups uncovered the [CONCEPT]: SIMPLIFICATION THROUGH FILTERING COMMUNICATION, which indicates the need for simplification of communication through filtering of information (See Appendix A for a more detailed analysis). For example, a participant from the second focus group has highlighted that “from a security perspective, by *knowing the type and size of the phenomena* it will help the police to classify areas according to the importance [of phenomena] that need to be greater focus” (FG2 I4). Another interviewee has also mentioned “customisation makes it better so people can *know where to report* an issue based on location” (I29). Similar to the first concept, these concepts indicate that when designing a communication strategy it is important to take into consideration the simplification of communication accessibility.

Simplification through filtering communication can bring value to both the police and the public, as revealed by the data collected from the interviews and focus groups. The property ~Work facilitation has emerged from the open coding. For example, a participant from the first focus group suggested that “[Customisation of communication] facilitates the *process* of identifying the locations and the work of [the different] departments and *not mixing phenomena and their solutions*” (FG1 I3).

The property ~Work facilitation has one ≤Dimension≥ that has emerged from the data collected. The dimension ≤Degree of work facilitation≥ indicates that work facilitation extends a continuum of how much easiness does the simplification through filtering communication bring to the police work. For example, one of the interviewees has stated that *“the police needs to customise the app in twitter to avoid the boundaries as threat/issues or concern is not only from certain places” (147).*

The data collected from the interviews and focus groups has also indicated that simplification through filtering communication can bring value to the public. The property ~Easiness (to the public) has emerged from open coding of the data. For example, one of the interviewees has said *“I would like to have the information about my neighbourhood or about topics. I can choose the topics and neighbourhood of interest. Other information might not be of importance to me” (139).*

The property ~Easiness (to the public) has one dimension that emerged from the data collected. The ≤Degree of easiness≥ indicates that work facilitation extends a continuum of how much easiness does the simplification through filtering communication bring to the public. For example, an interviewee has said *“I don’t want to spend my time reading things that don’t affect me” (139).*

5.2.3 [Concept]: Customisation of Communication Channels

The [CONCEPT]: CUSTOMISATION OF COMMUNICATION CHANNELS has emerged from data collected from interviews and focus groups to indicate that according to the participants, the communication between the police and the public in the UAE should be customised (See Appendix A for a more detailed analysis). For example, one of the interviewees has suggested to “*customise the account to match the different topics in the neighbourhoods so that I get the required information on one page and do not have to filter out whatever is not needed*” (I43). Another participant from the second focus group has supported the same concept through stating “[*customisation*] gives the opportunity to receive a large number of requests from the public and *interact with them through specific topics*” (FG2 I1). From a strategic perspective, these findings indicate that when designing a communication strategy it is important to take into consideration the customisation of communication.

The data collected from the interviews and focus groups has revealed that the customisation of communication should be either according to topic or neighbourhood. The property ~**Customisation by topic** has emerged from open coding of the data. For example, a participant from the second focus group has stated that “*there is an opportunity to focus and highlight some important and sensitive topics, rather than having a general account that addresses topics in general which does not facilitate the process of addressing phenomena in a*

correct way” (FG2 I1). Another interviewee has also suggested to “*customise the accounts according to topics for easier search and use*” (I33).

The property ~**Customisation by topic** has one ≤**Dimension**≥ that has emerged from the data collected. The dimension ≤**Range of topic types**≥ indicates that the customisation of communication could extend a set of topics. For example, an interviewee has suggested a need for “*a few different categories which would make life of the public a bit easier, like crime stoppers, society lovers etc.*” (I14). Another interviewee supported this by proposing to “*customise it according to area or topics, such as Law and order, stop crime, traffic, Social commitment etc.*” (I10).

The data collected from the interviews and focus groups has also showed that the customisation of communication should be according to neighbourhood. The property ~**Customisation by neighbourhood** has emerged from open coding of the data. For example, one of the interviewees has stated that “*it would be best to customise it for different neighbourhoods so information can be filtered at a later date*” (I48). Another interviewee has suggested to “*customise the account according to different neighbourhoods so as to provide us with filtered data*” (I46).

The property ~**Customisation by neighbourhood** has one dimension that emerged from the data collected. The ≤**Dimension**≥ indicates that the customisation by neighbourhood extends a ≤**Range of**

neighbourhoods≥. For example, an interviewee has suggested to “*divide it per local areas, like Kalifa city, AL Rowdah, etc. This would make it easier for the police to serve the locals in the area*” (I17).

5.2.4 [Concept]: Information Integration

Data collected from interviews and focus groups uncovered the [CONCEPT]: INFORMATION INTEGRATION, which indicates the need for integration of information in a one-point of access (See Appendix A for a more detailed analysis). For example, one of the interviewees has stressed to “*make it one account and keep it open for all topics. The police have to take action for all complaints anyways then why split it*” (I8). Another interviewee has also supported this view suggesting “*one main account where everything can be mentioned in detail to the POLICE, instead of having a lot of accounts*” (I9). This concept indicates that when designing a communication strategy it is important to take into consideration the integration of information into one-point of accessibility.

Integrated information can bring value to both the police and the public, as revealed by the data collected from the interviews and focus groups. The property ~consistency has emerged from open coding of the data. For example, one of the interviewees has suggested to “*keep the current twitter account general so that it will have consistency*” (I40). The property ~consistency has the dimension ≤ Degree of consistency ≥ associated with it. For example, one of the interviewees has objected

that *“customising would make it look like too many duplicate accounts”* (I7). This dimension shows that consistency varies depending on the number of Twitter accounts generated.

The data collected from the interviews and focus groups has indicated that information integration can also bring value through effectiveness. The property **~Effectiveness** has emerged from open coding of the data. For example, one of the interviewees has said that *“I may see a problem in a different part of the city hence a general account would be more effective”* (I27). The property **~Effectiveness** has the dimension **≤Degree of effectiveness>** associated with it. For example, one of the interviewees has stressed that *“the police should keep a general account first. Only after the general account proves helpful and successful should they maybe think about customising per topic or neighbourhood”* (I50). This dimension shows that effectiveness of the communication varies depending on the number of Twitter accounts generated.

The data collected from the interviews and focus groups has indicated that information integration can also bring value through accessibility. The property **~Accessibility** has emerged from open coding of the data. For example, one of the interviewees has suggested a *“general account ... so that we do not have to look for any other page for information”* (I34). The property **~Accessibility** has the dimension **≤Degree of accessibility>** associated with it. For example, one of the

interviewees has suggested that “[Twitter] account should be general so we don’t get confused in the search and that we can *address issue wherever we are*” (I27). This dimension shows that accessibility varies depending on the number of Twitter accounts generated.

5.2.5 [Concept]: Communication Feedback

The [CONCEPT]: COMMUNICATION FEEDBACK has emerged from data collected from interviews and focus groups to indicate that according to the participants, the police should be giving immediate feedback to the public in the UAE (See Appendix A for a more detailed analysis). For example, one of the interviewees has said “*I would prefer to have some feedback from the account, rather than we posting stuffs and not hearing back anything from the police*” (I7). Another interviewee has supported the same concept through stating “*a feedback would be nice or even a polite automated reply can do the job, but personal messages are always the better option*” (I19). From a strategic perspective, these findings indicate that when designing a communication strategy it is important to take into consideration instantaneous feedback on communication by the public.

The data collected from the interviews and focus groups has revealed that communication feedback should consider a number of features. The property ~Response time has emerged from open coding of the data. For example, one of the interviewees has suggested that “*immediate feedback on Twitter would be nice given how very quick*

information is distributed nowadays” (I32). Another interviewee has also suggested that “immediate feedback would be a great idea. It would lessen the stress of answering phone calls and meeting people all day” (I41).

The property **~Response time** has one **≤Dimension>** that has emerged from the data collected. The dimension **≤ Duration ≥** indicates that the response time could extend a certain duration. For example, an interviewee has suggested a need for *“Immediate feedback on Twitter would be beneficial to avoid queues, if done in person, and waiting time, if on the phone” (I48).*

The data collected from the interviews and focus groups has also showed that the communication feedback should be shared. The property **~Shared feedback** has emerged from open coding of the data. For example, one of the interviewees has stated that *“Immediate feedback should be shared. No one will post on such pages until its urgent, and delayed responses won’t help in this case” (I37).* Another interviewee has explained that *“if immediate update or feedback is required, then sharing it is the right thing to do” (I39).*

The property **~Shared feedback** has one emergent dimension that emerged from the data collected. The **≤Dimension>** indicates that shared feedback extends a **≤Degree of sharing feedback>**. For example, an interviewee has argued “like any customer satisfaction tool, if the

person on twitter account can give **immediate feedback** then it's much better as it is **useful for others** who **have the same issue**" (I26).

The data collected from the interviews and focus groups has revealed that communication feedback should also consider the feasibility of feedback. The property **~Feasibility** has emerged from open coding of the data. For example, one of the interviewees has suggested that *"immediate feedback would be nice, but not sure how feasible that would be for the police"* (I10).

The property **~Feasibility** has three **≤Dimensions≥** that has emerged from the data collected. The first dimension **≤Degree of feasibility≥** indicates that the feasibility for the feedback extends a range of feasibility degrees. For example, an interviewee has argued that *"immediate feedback is almost impossible, but such accounts ensure that department is now aware of any issue raised"* (I3). The second and third dimensions **≤Size of issue≥** and **≤Type of issue≥** indicate that the feasibility for the feedback depends on the issue size and type respectively. For example, an interviewee has argued that *"for smaller cases complained in the local police station we can expect an immediate feedback from the department"* (I11), whilst another interviewee has argued that *"immediate feedback would be better specially in emergency case, followed by phone call and face to face meetings"* (I29)

The data collected from the interviews and focus groups has also showed that the communication feedback should also consider the

suitability for feedback. The property **~Suitability of feedback** has emerged from open coding. For example, one of the interviewees has argued that *“immediate feedback is necessary. Whether on twitter or personal message? Doesn’t matter much”* (I46). Another interviewee has explained that *“it is about how issues raised by general public must be resolved. In this context, I think if the issue is very serious and personal and would not affect anybody other than the concerned person, then it should be addressed over the phone or in person and not in public. But if the concerns are generic and can adversely affect the general public then an immediate tweet might help”* (I31).

The property **~Suitability of feedback** has two dimensions that emerged from the data collected. The first indicates that the suitability of feedback extends a **≤Range of feedback methods≥**. For example, an interviewee has highlighted that *“... this depends on the issue. If it is a private matter phone or in person might be more effective and harvest more trust between the police and the public. However for general matters it might be a better idea to receive immediate feedback on twitter to save time and so people could use it as a reference for the future (like an FAQ)”* (I28). The second **≤ Dimension ≥** indicates that the suitability of feedback extends a **≤Degree of suitability≥**. For example, an interviewee has said *“I prefer personal call or face-to-face meetings, it makes people feel important and make them explain more the issue as twitter will allow only limited number of characters which sometimes is not enough”* (I27).

5.2.6 Summary of concepts in {CATEGORY 1}: {COMMUNICATION STRATEGY}

Table 5.1: Summary of {CATEGORY 1} concepts and their properties and dimensions

[CONCEPT]	~Property	≤ Dimension ≥
CONTEXT DEPENDENT ISSUES Communication strategy requires considering that issues/phenomena are contextual, either on: neighbourhood or geography context	Neighbourhood context Phenomena are different in different neighbourhoods	Range of neighbourhood phenomena/issues types/sizes Differences in neighbourhood phenomena range in type and size Size of neighbourhood population Differences in neighbourhood phenomena range in size of habitants
	Urban/rural context Phenomena are different in urban than rural areas	Range of geography phenomena types The range of phenomena types is different in urban from rural areas
SIMPLIFICATION THROUGH FILTERING COMMUNICATION Communication strategy requires considering simplification of communication through filtering of information	Work facilitation Work facilitation is a characteristic of simplification through filtering (value to the police)	Degree of work facilitation The extent of work facilitation is determined by the extent of simplification through filtering communication
	Easiness (to the public) Easiness is a characteristic of simplification through filtering communication (value to the public)	Degree of easiness The extent of easiness to public is determined by extent of simplification through filtering communication
CUSTOMISATION OF COMMUNICATION CHANNELS Communication strategy requires considering customising communication by topic and/or neighbourhood	Customisation by topic Topic is a characteristics of customisation (i.e. focused on specific areas of concern)	Range of topic types Customisation by topic ranges according to topic types
	Customisation by neighbourhood Neighbourhood is a characteristics of customisation (i.e. focused on issues of concern to a certain community)	Range of neighbourhoods Customisation by neighbourhood ranges according to the number of neighbourhoods
INFORMATION INTEGRATION Communication strategy requires considering integration of information in a one-point of access for consistency, effectiveness and accessibility	Consistency Consistency is a characteristic of integrated information (value to both the police and the public)	Degree of consistency Consistency of communication ranges depending on information integration (i.e. extent of information duplication)
	Effectiveness Effectiveness is a characteristic of integrated information (value to both the police and the public)	Degree of effectiveness Effectiveness of communication ranges depending on information integration
	Accessibility Accessibility is a characteristic of integrated information (value to both the police and the public)	Degree of accessibility Accessibility to communication ranges depending on information integration

Table 5.1: Summary of {CATEGORY 1} concepts and their properties and dimensions (Cont.)

[CONCEPT]	~Property	≤ Dimension ≥	
COMMUNICATION FEEDBACK Communication strategy requires considering giving feedback to the public through better response time and better sharing, and suitable to them when it is feasible	Response time Response time is a characteristic of communication feedback	Duration Response time is determined by the duration from communicating an issue to receiving a feedback (range from immediate to no response)	
	Shared feedback Sharing feedback is a characteristic of communication feedback	Degree of sharing feedback The extent to which the feedback is shared (e.g. number of people who can see the feedback) is determined by how the feedback is shared (e.g. on Twitter or one-to-one communication)	
	Feasibility Feasibility is a characteristic that defines communication feedback		Degree of feasibility Feasibility of feedback is determined by the practicality of the feedback
			Size of issue Feasibility of feedback is determined by the size of the issue
			Type of issue Feasibility of feedback is determined by the type of the issue
	Suitability of feedback Suitability to the receiver is a characteristic of communication feedback		Range of feedback methods The suitability of the feedback extends a range of methods from personal (e.g. one-to-one or email) to group (e.g. through social media such as Twitter)
			Degree of suitability The suitability of the feedback could range depending on the method of feedback

5.3 {CATEGORY 2}: {COMMUNICATION ENGAGEMENT}

The findings from grounded theory open coding have revealed the following three concepts that relate to the creation of a **{COMMUNICATION ENGAGEMENT}**:

- 1. TWO-WAY COMMUNICATION**
- 2. BRINGING COMMUNITIES AND POLICE CLOSER**
- 3. COMMUNICATION MOTIVATION**

The above three concepts have emerged from data collected from interviews and focus groups and were grouped under the category **{COMMUNICATION ENGAGEMENT}** based on similarities on the level of properties and dimensions. Each of the concepts will be explained in the next few sections.

5.3.1 [Concept]: Two-Way Communication

The **[CONCEPT]: TWO-WAY COMMUNICATION** has emerged from data collected from interviews and focus groups and indicates that the public in the UAE prefer two-way communication (See Appendix A for a more detailed analysis). For example, one of the interviewees has argued that *“it is always healthy to have **two ways communication**”* (I1), while another argued that *“**broadcasting [one-way communication] won’t be sufficient**”* (I37). A third interviewee has supported the same concept through highlighting that *“[the police] should allow **interaction**. Ideally they can add a setting to control posts submitted by users. But **broadcasting** would be a lot like news channels and **we wouldn’t want to follow another news channel**”* (I38). These findings indicate that communication engagement requires enabling the public and communities with two-way interactive communication, as opposed to one-way only broadcasting type communication.

The data collected from the interviews and focus groups has revealed that two—way communication is about the interaction it provides to the participants. The property **~Interaction** has emerged

from open coding of the data. For example, one of the interviewees has stated that *“the police should allow interactions and topics from its followers”* (I50). A second interviewee has supported the same and has highlighted that the *“main motive of social media was to increase interaction. Only broadcasting wouldn’t mean the page is social and I thought this page was for the people”* (I39).

The property **~Interaction** has two **≤Dimensions≥** that has emerged from the data collected. The first **≤Degree of interaction≥** shows that interaction can vary along of spectrum. For example, one of the interviewees has mentioned that *“few would like to involve in a conversation with the department”* (I11), while another has advised to *“allow people to respond, otherwise what would be the purpose of having a twitter account?”* (I34). The second **≤Range of ways for interaction≥** specifies that interaction can be done in various ways. For example, a one of the interviewees has suggested that *“it all depends on each situation; there may be few cases which may not be discussed in an internet forum where others can view the conversation, whereas topics mentioned here now can be given feedback at the earliest”* (I12).

5.3.2 [Concept]: Bringing Communities and Police Closer

Data collected from interviews and focus groups uncovered the **[CONCEPT]: BRINGING COMMUNITIES AND POLICE CLOSER**, which indicates the need for allowing more participation of the public in the decision making process and reaching collective solutions (See Appendix A for a more

detailed analysis). For example, a participant from the second focus group has argued that *“communication with the public in **participative, interactive conversations** is critical because it creates a **link between the police and the community**”* (FG2 I3). Another participant from the second focus group has also supported this through advising to *“reach **collective solutions** between both parties, which will lead to an **excellent relationship** between the public and the police”* (FG2 I4). Another interviewee has also posited that *“the public should **participate and interact** with the police, after the police department **works for the wellbeing of the public** and they have the right to raise their voice”* (I2). This concept indicates that communication engagement has a considerable impact on the relationship between the police and the public.

Bringing Communities and Police Closer impacts on the transparency of the police and hence the confidence of the public in the police, as revealed by the data collected from the interviews and focus groups. The property **~Transparency** has emerged from open coding of the data. For example, one of the interviewees has suggested that *“**two ways communication** to keep some **discussions open** with the public, that’s the whole point of using social media to interact with the public”* (I1).

The property **~Transparency** has one **≤Dimension≥** that has emerged from the data collected. The dimension **≤Degree of**

transparency indicates that Bringing Communities and Police Closer depends on the amount of transparency of the police with the public. For example, one of the interviewees has argued that *“Twitter is an interactive tool, it makes people get closer and makes me feel that I can access the police any time in case of emergency and I can get immediate answers. Broadcasting only will be boring and I might not follow it”* (I30).

The data collected from the interviews and focus groups has indicated that Bringing Communities and Police Closer also impacts on the confidence of the public. The property **~Confidence** has emerged from open coding of the data. For example, one of the participants in the second focus group has said *“participative, interactive conversations ... to gain public confidence”* (FG2 I3). This supports a statement by another participant in the first focus group, who argued that engaging the public in two-way conversations *“contributes to the public feeling [confident] through listening to them and discussing about solutions ... because the problems will be solved in a healthy and legal way which leads to governance”* (FG1 I4)

The property **~Confidence** has one dimension that emerged from the data collected. The **≤Degree of confidence** indicates that the confidence of the public in the police – as a result of two-way communication – extends a range of how much the public can be confident in the police. For example, one of the participants in the first focus group has argued that Bringing Communities and Police Closer

through two-way communication “increases *trust* of citizens and expatriates in the presence of departments that thrives to address the phenomena that cause anxiety” (FG1 I1). This argument was also matched by one of the participants in the second focus group who has added that “when there is *confidence* by the public, there is credibility and abundance of accurate information in the interaction” (FG2 I2).

5.3.3 [Concept]: Communication Motivation

The [CONCEPT]: COMMUNICATION MOTIVATION has emerged from data collected from interviews and focus groups to indicate that the public in the UAE need to be motivated to communicate with the police on Twitter (See Appendix A for a more detailed analysis). For example, one of the participants in the first focus group has suggested, “to make the *society interact with the police* in finding solutions” (FG1 I2). This was echoed by one of the interviewees who has supported the same concept through suggesting to “allow the public to ... *add discussions* for queries and suggestions” (I42). These findings indicate that when designing a communication engagement plan it is important to take into consideration the motivation of the public in communication.

The data collected from the interviews and focus groups has revealed that the communication motivation should be through awareness, participation, and confidentiality. The property ~Awareness has emerged from the open coding. For example, a participant from the second focus group has argued that “*engaging the public* in interactive

conversations allows the police to activate awareness” (FG2 I2). This is supporting another argument by a participant from the first focus group who stated that “[the public would benefit from ways to know the type of phenomena and problems” (FG1 I1).

The property ~Awareness has one ≤Dimension> that has emerged from the data collected. The dimension ≤Degree of awareness> indicates that the motivation for communication could extend a continuum of how much an individual is aware of the communication between the police and the public. For example, an interviewee has suggested a need for “accessibility to the type of phenomena in such neighbourhoods” (FG1 I2).

The data collected from the interviews and focus groups has also showed that the communication motivation should be enhanced through participation. The property ~Participation has emerged from open coding of the data. For example, one of the interviewees has argued that “the police should allow the public to participate by allowing them to add discussions for queries and suggestions” (I40). This supports the argument by another interviewee who has suggested that “the public should participate and interact with the police, after the police department works for the wellbeing of the public” (I2).

The property ~Participation has two ≤Dimensions> that emerged from the data collected, which indicate that the communication motivation is influenced by both the ≤Frequency of participation> and

the **≤Number of participants≥**. For example, an interviewee has argued that *“broadcasting it only, would make us follow the page lesser. It is simple one way communication is never interesting”* (I31), while another has argued that *“increased number of interactive online users will help the police regulate them better”* (I31).

The data collected from the interviews and focus groups has also revealed that the communication motivation is influenced by confidentiality. The property **~Confidentiality** has emerged from open coding of the data. For example, one of the interviewees has argued that *“no issue with confidentiality, people are responsible of what they tweet, they are also dealing with the police and should have full trust in them”* (I27). This is supporting another argument by a one of the participants from the second focus group who stated that *“when maintain privacy by the police, it allows the interacting members of the public freedom in the type of talks and ensures safety for those interacting which encourages them to provide information on specific phenomena that may be caused by certain people in the neighbourhood and hence making it easier for the police to identify these people quickly”* (FG2 I1).

The property **~Confidentiality** has one **≤Dimension≥** that has emerged from the data collected. The dimension **≤Range of ways to keep confidentiality≥** indicates that the motivation for communication could extend a range of ways to keep confidentiality. For example, an interviewee has suggested that *“we can't really afford privacy in any*

social media, the best you can do is use a fake account while complaining about anything serious” (I15), while another pointed at the possibility to “create a fake profile if that’s a big concern” (I25).

5.3.4 Summary of concepts in {CATEGORY 2}: {COMMUNICATION ENGAGEMENT}

Table 5.1: Summary of {CATEGORY 2} concepts and their properties and dimensions

[CONCEPT]	~Property	≤ Dimension ≥
Two-WAY COMMUNICATION Communication engagement requires considering two-way communication (i.e. a dialogue) between members of the public and the police	Interaction Interaction is a characteristic of two-way communication for communication engagement	Degree of interaction The extent to which two-way communication allows for interaction and communication engagement (e.g. through allowing users to respond)
		Range of ways for interaction The set of methods available for interaction in two-way communication for communication engagement
	Transparency Transparency is a characteristic of narrowing the gap between communities	Degree of transparency The extent of transparency that allows for participation and accessibility; narrowing the gap between communities and the police
	Confidence Confidence is a characteristic of narrowing the gap between communities	Degree of confidence extent of confidence that enables participation and accuracy of information; narrowing the gap between communities and police
COMMUNICATION MOTIVATION Communication engagement requires considering communication motivation, for example through awareness, participation and confidentiality	Awareness Awareness is a characteristic of communication motivation	Degree of awareness The extent of awareness of members of the public influences communication motivation
	Participation Participation is a characteristic of communication motivation	Frequency of participation The frequency of participation influences communication motivation
		Number of participants The number of (interactive) users influences communication motivation
Confidentiality Confidentiality is a characteristic of communication motivation	Range of ways to keep confidentiality Range of methods to keep confidentiality influences communication motivation	

5.4 {CATEGORY 3}: {GOVERNANCE}

The findings from grounded theory open coding have revealed the following six concepts that relate to **{GOVERNANCE}**:

1. **CONTEXT DEPENDENT DECISION MAKING**
2. **POWER DISTRIBUTION**
3. **PARTICIPATIVE DECISION MAKING**
4. **Shared Decision making Impact**
5. **MONITORING & CONTROL OF COMMUNICATION & DECISIONS**
6. **Escalation**

The above six concepts have emerged from data collected from interviews and focus groups and were grouped under the category **{GOVERNANCE}** based on similarities on the level of properties and dimensions.

5.4.1 [Concept]: Context Dependent Decision making

The **[CONCEPT]: CONTEXT DEPENDENT DECISION MAKING** has emerged from data collected to indicate that like the issues communicated by the public on Twitter, decision making is contextual (See Appendix A for a more detailed analysis). For example, one of the focus group participants has stated that *“decision making from smaller **decentralised centres** which exists inside the **neighbourhoods** is better because [they] can solve what is **related to these areas**” (FG1 I5)*. Another focus group participant has supported the concept through suggesting to *“identify the **suitable ways to solutions**” (FG1 I1)*. From a governance perspective, these

findings indicate that when designing a governance strategy, it is important to take into consideration the context of decision making.

The data collected from the interviews and focus groups has revealed that the decision making context is both neighbourhood and issue dependent. The property **~Neighbourhood context** has emerged from open coding of the data. For example, a participant from the second focus group has argued that *“from a security perspective, by knowing the **type and size of the phenomena** it will help the police to **classify areas** according to the importance [of phenomena] that need to be greater focus” (FG2 I4).*

The property **~Neighbourhood context** has one **≤Dimension>** that has emerged from the data collected as shown **≤Type of neighbourhood>** indicates that the neighbourhood context extends a range of types. For example, a participant in the first focus group has argued that *“decision making from smaller **decentralised centres** which exists inside the **neighbourhoods** is better because [they] can solve what is **related to these areas**” (FG1 I5).*

The data collected from the interviews and focus groups has also showed that the context is issue dependent. The property **~Issue context** has emerged from open coding of the data. For example, one of the interviewees has expressed that *“the **decision making** should be **distributed at neighbourhood centres** that follow the main centres **depending on issues** and their importance” (FG2 I3).*

The property ~Issue context has two emergent ≤Dimensions>. The first indicates that the issue context extends a range of ≤Type of issue> and the second indicates that it also extends a range of ≤Size of issue>. For example, one of the participants in the second focus group has suggested that *“the type of phenomena to decide whether the decision making process should be at the main police centre or by delegated officers in local neighbourhoods”* (FG2 I4). Another participant in the first focus group has suggested that *“it is possible to address phenomena through decentralised centres by getting to know the size of the phenomena”* (FG1 I1).

The data collected from the interviews and focus groups has also revealed that the decision making context is influenced by the criticality of the issue. The property ~Decision criticality has emerged from open coding of the data. For example, a participant from the second focus group has argued that *“decision making should be distributed at neighbourhood centres that follow the main centres depending on issues and their importance”* (FG2 I3). This argument has been supported by one of the interviewees who has stated that *“minor and specific problems should be dealt with the local police station while the major issues should be addressed to the police headquarter”* (I48)

The property ~Decision criticality has one ≤Dimension> that has emerged from the data collected. ≤Degree of criticality> indicates that the decision extends a range, which depends on the how much the

decision is critical. For example, a participant in the first focus group has argued that *“the decisions split into two types, a secondary type where a decision needs to be taken quickly and on the spot because it relates to the public or a phenomenon that belongs to the public, while the other is a primary type where a major decision need to be taken that is related to security events in which it must security measures need to be studied upon which important decisions making depends”* (FG2 I1). This argument has been supported by one of the interviewees who has stated that *“small and minor issues can be dealt in the local stations and other bigger problems can be escalated to the HQ”* (I8).

5.4.2 [Concept]: Power Distribution

Data collected from interviews and focus groups uncovered the **[CONCEPT]: POWER DISTRIBUTION**, which indicates the need for some degree of decentralisation of the decision making process through distribution of power (See Appendix A for a more detailed analysis). For example, a participant from the second focus group has argued that *“there must be distributed powers to authorized persons in police and which are located in residential neighbourhoods”* (FG2 I1). Another interviewee has also stated *“may be decentralize a limited amount of power can prove to be a step towards improvement”* (I34). Similar to the first concept, these concepts indicate that when designing a governance strategy to respond to Twitter issues, it is important to take into consideration the power

distribution with local police stations and neighbourhood representatives.

Power distribution requires empowerment, as revealed by the data. The property **~Empowerment** has emerged from open coding of the data. For example, a participant from the first focus group has suggested that empowerment *“facilitates in solving problems, save time, helps in narrowing down the problems and participation of the community in this neighbourhood in solving what phenomena are annoying them”* (FG1 I2). This supports the argument by one of the interviewees earlier who suggested to *“give more power to the local station”* (I16)

The property **~Empowerment** has one **≤Dimension≥**: the **≤ Degree of empowerment ≥** which indicates that empowerment extends a continuum of how much are local police stations and/or communities in the neighbourhoods are empowered. For example, one of the interviewees has suggested to *“decentralize. Allow Local Police stations to deal with minor and specific problems and major problems can be handled by the headquarters”* (I35). This argument has been supported by a participant from the second focus group *“the decision making should be distributed at neighbourhood centres that follow the main centres depending on issues”* (FG2 I3).

The data collected from the interviews and focus groups has also indicated that expertise is a factor when considering power distribution.

The property ~**Expertise** has emerged from open coding of the data. For example, one of the participants from the first focus group has said “*It is possible to address phenomena through decentralised centres by ... **trained professionals** who follow the main centre to address phenomena at its source*” (FG1 I1), while another from the second focus group has suggested “*decentralisation of decisions to be given to authorized and trained persons in the **local centres in the neighbourhoods***” (FG2 I5).

The property ~**Expertise** has two **≤Dimensions≥**: the **≤Degree of expertise ≥** which indicates that expertise extends a continuum of capabilities and the **≤Judgement ability≥** which indicates that expertise extends a continuum of ability to judge in different situations. For example, one of the participants from the first focus group has it “*helps in distributing **experts for solving problems** relative to the size of the problem and the existing phenomena*” (FG1 I1) while an interviewee has said “*centralised better so they don’t leave it to **personal judgment***” (I29).

5.4.3 [Concept]: Participative Decision making

The **[CONCEPT]: PARTICIPATIVE DECISION MAKING** has emerged from data collected from interviews and focus groups to indicate that according to the participants, the public in the UAE should be able to participate in the decision making process (See Appendix A for a more detailed analysis). For example, a participant from the second focus group has argued that “*participation in decision making continues to*

provide an excellent environment for real interactions” (FG2 I1). The participant has added that “in easy situations and phenomena that can be solved with the participation of the public, the decision making process must be decentralized and decisions should be taken immediately after the debate with the interacting participants in the account based on the information available” (FG2 I1). From a governance perspective, these findings reveal that decision making should be participative with collaboration of the public.

The data collected from the interviews and focus groups has revealed that the participation in decision making is influenced by in depth understanding of the context. The property **~Understanding of context** has emerged from open coding of the data. For example, a participant from the first focus group has highlighted that *“the current time requires the participation of the public in all decisions and solutions related to the phenomena that constitute concern and nuisance to them, because some segments of society are different from others” (FG1 I3).*

The property **~Understanding of context** has one **≤Dimension≥** that has emerged from the data collected from interviews and focus groups. The dimension **≤ Degree of context variation ≥** indicates that the understanding of context could extend various types of context. For example, a participant from the first focus group has stressed that *“some segments of society are different from others” (FG1 I3).*

The data collected from the interviews and focus groups has also showed that the participation in decision making is influenced by the competence of participants. The property **~Competence** has emerged from open coding of the data. For example, a participant from the first focus group has argued that *“an account that covers and highlights the phenomena that cause disturbance and anxiety to citizens [neighbourhoods] who may find solutions for it from experience”* (FG1 I3).

The property **~Competence** has one **≤Dimension≥: ≤Degree of competence of a community expert≥**, which indicates that the competence could extend a range of depth in experience and expertise. For example, an interviewee has suggested to *“give more power to stations better as it minimize the time and efforts of both parties but the decision should be with one person only who is wise enough to take vital decisions”* (I27).

The data collected has revealed that the participation in decision making is influenced by the amount of activity of the participant. The property **~Activity/participation** has emerged from open coding of the data. For example, a participant from the second focus group has highlighted that *“interactive public can be divided into two groups, a group that is effective and active who interact on a daily basis and a group occasionally participate when they are exposed to an inconvenient incident”* (FG2 I4).

The property ~Activity/participation has one ≤Dimension> that has emerged from the data collected. The dimension ≤Frequency of activity/participation> indicates that activity/participation could extend a spectrum depending on the intensity of such activity/participation. For example, one of the participants from the second focus group has stressed that *“[the police] should take care of the active group and meet their needs to ensure they continue their interactions and provision of information that helps in solving social phenomena. The second group can be dealt with in a way that motivates them and make them an active group”* (FG2 I4).

5.4.4 [Concept]: Shared Decision making Impact

Data collected from interviews and focus groups uncovered the [CONCEPT]: SHARED DECISION MAKING IMPACT, which highlights the impact from having participation from the local police stations and the communities in decision making (See Appendix A for a more detailed analysis). For example, one of the interviewees has argued that *“more power to local police station will lead to better management of emergencies”* (I34). Another interviewee has also supported this argument suggesting *“the police should give more power to local police stations for quicker turnaround response on minor problems at least”* (I41). This concept indicates that when designing a governance strategy, it is useful to take into consideration the different impacts from enabling

the local police stations and the communities to participate in decision making.

Shared decision making can bring value to both the police and the public, as revealed by the data collected from the interviews and focus groups. The property **~Easiness** has emerged from open coding of the data. For example, one of the participants in the first focus group has suggested *“decision making from smaller **decentralised centres** ... **facilitating the work of the main centre** in dealing with the big size problems which makes decision makers **concentrate more in national security issues**”* (FG1 I5). The property **~Easiness** has the dimension **≤Degree of easiness≥** associated with it. For example, one of the participants in the first focus group has argued that *“having an **account for each neighbourhood** makes the decision making process difficult [for the police] and **hard to filter** the phenomena because of the large number of ... neighbourhoods”* (FG1 I4).

The data collected from the interviews and focus groups has indicated that shared decision making can also bring value through performance efficiency of the police. The property **~Performance efficiency** has emerged from open coding of the data. For example, one of the interviewees has stated that *“... giving more **power to local police stations** in neighbourhoods could allow them to do their jobs more **efficiently** since they are better used to the **culture** within their respective neighbourhoods”* (I28). The property **~Performance efficiency** has the

dimension **≤Range of performance efficiency≥** associated with it. For example, one of the participants in the second focus group has suggested that *“this experience [account for each neighbourhood] saves time, effort and resources”* (FG2 I2).

The data has also indicated that shared decision making can lead to the police being more proactive. The property **~Proactive policing** has emerged from open coding of the data. For example, one of the interviewees has argued that *“less regulation could also motivate local police stations to be more proactive with their service, reducing red tape could also eliminate time and money wasted in delay action in order to receive specific orders from headquarters”* (I28). The property **~Proactive policing** has the dimension **≤Degree of proactivity≥** associated with it. For example, one of the interviewees has suggested that *“the police should give more power to local police stations to encourage immediate action on the problem limited to its neighbourhood. Waiting on the police response would waste time”* (I50).

Shared decision making can also bring value to both the police and the public, as revealed by the data collected from the interviews and focus groups. The property **~Representative solutions** has emerged from open coding of the data. For example, one of the participants in the second focus group has suggested *“customised accounts enable the opportunity to know the solutions from engaged public”* (FG2 I1). The property **~Representative solutions** has the dimension **≤Degree of**

representativeness associated with it. For example, one of the participants in the second focus group has argued that *“when the public is engaged, it will create joint solutions”* (FG2 I5).

Shared decision making can also bring value through speed, as revealed by the data collected from the interviews and focus groups. The property **~Speed** has emerged from open coding of the data. For example, one of the participants in the first focus group has suggested *“decentralisation of decision making will lead to faster and positive response which will be more convenient for the public”* (FG1 I4). The property **~Speed** has the dimension **≤Degree of easiness** associated with it. For example, one of the participants in the first focus group has argued that *“solution should be instantaneous and fast”* (FG1 I2).

The data has also indicated that consistency should be maintained when considering shared decision making. The property **~Consistency** has emerged from open coding of the data. For example, one of the interviewees has argued that decision making should be *“centralised at the police headquarters only for consistency”* (I44), while another has argued that *“for uniformity, it is best to keep the current decision making unified only at The police headquarter so that they will be informed first, then they can pass it on to the local police station”* (I40). The property **~Consistency** has the dimension **≤Degree of consistency** associated with it, as shown in Table 4.12. For example, one of the interviewees has suggested that as a minimum measure to

ensure consistency “the *main centre should be informed of all what has been reached of solutions concerning the different phenomena in the residential neighbourhoods that may have been difficult to resolve but with collaboration with the public they have identified new ways to resolve it within the areas that exist in the phenomena*” (FG2 I5).

Shared decision making can also bring value through the quality of decisions, as revealed by the data collected from the interviews and focus groups. The property ~Decision quality has emerged from open coding of the data. For example, one of the participants in the first focus group has suggested that “*quality will be realised by implementing decentralisation in decision making*” (FG1 I3). The property ~Decision quality has two dimensions: ≤Range of types of phenomenon≥ and ≤Size of phenomenon≥ associated with it. For example, one of the participants in the second focus group has argued that “*true and detailed interactions by the police and the community leads to solutions to the phenomena depending on their type and size*” (FG2 I2), which shows that both the type and size represent characteristics in the quality of decisions.

The above properties and dimensions show that shared decision making with local police stations and the relevant communities can bring value to both through easiness, performance efficiency, proactive policing, representative solutions, speed and quality, while promoting the need to maintain consistency.

5.4.5 [Concept]: Monitoring & Control of Communication & Decisions

The [CONCEPT]: MONITORING & CONTROL OF COMMUNICATION & DECISIONS has emerged from data collected from interviews and focus groups to indicate the necessity of monitoring and controlling the communication and decisions by the police and/or members of the community (See Appendix A for a more detailed analysis). For example, one of the interviewees has emphasised that *“the police should ensure to monitor the information posted or at least give the public guidelines”* (I41). Another interviewee has supported the same concept through stating *“Just a noted receipt on the issue raised would keep the public happy, so that we are aware that the account is been actively monitored”* (I9). From a governance perspective, therefore, these findings indicate that when designing a governance strategy it is important to take into consideration the need to set monitoring and control policies and measures.

The data collected from the interviews and focus groups has revealed that monitoring and control should consider a number of features. The property ~Complexity has emerged from open coding of the data. For example, one of the interviewees has suggested that *“one account is fine, it would be easier to monitor and would look authentic”* (I18). Another interviewee has also suggested that by refereeing to their city *“Abu Dhabi is the biggest emirate, so, the number of neighbourhoods will be very high and this will lead to high number of twitter accounts to*

manage. So, keeping it generic makes all the more sense to me. So that every national of the region gets all the information and details confined in one page” (I31).

The property **~Complexity** has one **≤Dimension≥** that has emerged from the data collected. The dimension **≤Degree of complexity≥** indicates that the extent of complexity of monitoring and control should be governing the number of Twitter accounts introduced. For example, an interviewee has suggested that *“the more accounts the more complex it becomes”* (I23).

The data collected from the interviews and focus groups has also showed that quality is another feature associated with monitoring and control. The property **~Quality** has emerged from open coding of the data. For example, one of the participants of the second focus group has stated that *“there must be monitoring and sharing of reports from these neighbourhood police centres that made these decisions with the main police centre for sharing and assurance of the quality of decisions and the action mechanism”* (FG2 I1).

The property **~Quality** has one dimension that emerged from the data collected. The **≤Dimension≥** indicates that shared feedback extends a **≤Degree of quality≥**. For example, an interviewee has argued to *“give more power to local stations, but also make sure all the actions taken in local stations are monitored by seniors, I read about some random things which police officers did a few years back. So keep it all monitored”* (I16).

The data collected from the interviews and focus groups has revealed that a governance strategy should also consider the measures needed to ensure monitoring and control. The property ~Measures has emerged from open coding of the data. For example, one of the interviewees has suggested that *“the police can appoint someone who is monitoring these accounts 24/7 and keep us informed that they have got our message and would be looking into to the issue, etc.”* (I4).

The property ~Measures has one ≤Dimensions≥ that has emerged from the data collected. The dimension ≤Range of types of measures≥ indicates that there could be a range of measures that could be taken in monitoring and control of communication and decisions, and hence the police need to identify the suitable set of measures to the context. For example, an interviewee has argued to *“give more power to local police stations in order to quicken action on problems. Once more power is given, a type of measure should be used to monitor whether the public finds this more beneficial to their overall safety”* (I32).

5.4.6 [Concept]: Escalation

Data collected from interviews and focus groups uncovered the [CONCEPT]: ESCALATION, which indicates the need for an escalation procedure in case an issue arise from monitoring and control (See Appendix A for a more detailed analysis). For example, one of the interviewees has suggested that *“to an extent the government can give the local officers some power to solve small cases, however bigger cases*

needs to be sent to the HQ is my opinion" (I17). Another participant from the second focus group has also supported this through advising to "in the event of communication threads by the public with security issues, then it is the responsibility of the officer in charge to raise these issues to the authorities to take the necessary decisions and security measures that may require the involvement of other specialised parties in such subjects" (FG2 I2). This concept indicates that from a governance perspective there is a need to set escalation measures in cases where an issue needs to be escalated to higher governance authorities.

Escalation measures would depend on the size of the issue arising, as revealed by the data collected from the interviews and focus groups. The property ~Issue criticality has emerged from open coding of the data. For example, one of the interviewees has suggested that *"it's all depends on each case; smaller ones can be dealt in the local police station whereas the bigger one needs to escalate to the HQ"* (I13).

The property ~Issue criticality has one ≤Dimension≥ that has emerged from the data collected. The dimension ≤Degree of criticality≥ indicates that escalation measures based on the size of the issue will extend range of criticality severity. For example, one of the interviewees has suggested that *"it's better to divide the work load for the officers, petty cases can be solves in the local police station and the bigger ones can be sent to court or HQ"* (I14). A participant from the second focus group has also supported this through advising that *"decision making*

can be done in both ways, for instance any *local problems* can be dealt in the *local station* for smaller crimes or activities, whereas anything *beyond a certain point* should be reported to the *headquarters*” (I12).

5.4.7 Summary of concepts in {CATEGORY 3}: {GOVERNANCE}

Table 5.1: Summary of {CATEGORY 3} concepts and their properties and dimensions

[CONCEPT]	~Property	≤ Dimension ≥
CONTEXT DEPENDENT DECISION MAKING Governance requires considering the context for decision making (for better, informed decision)	Neighbourhood context Neighbourhood context is a characteristic of decision making	Type of neighbourhood Neighbourhood context (and hence decision making) is influenced by the type of neighbourhood
	Issue context Issue (or phenomenon) context is a characteristic of decision making	Type of issue Neighbourhood context (and hence decision making) is influenced by the type of issue (or phenomenon)
		Size of issue Neighbourhood context (and hence decision making) is influenced by the size of issue (or phenomenon)
	Decision criticality The criticality of a decision (and therefore the criticality of the issue) is a characteristic of decision making	Degree of criticality The decision criticality is influenced by the extent to which the decision (and the issue) is critical (ranging from small/minor issues to big issue, or secondary type to primary type issues)
POWER DISTRIBUTION Governance requires considering decentralisation through power distribution to both local police units and communities	Empowerment Empowerment local police units and communities is a characteristic of power distribution	Degree of empowerment Empowerment is influenced by the extent to which local police units and communities are allowed to make decisions at a local level
	Expertise Expertise of local police units and communities is a characteristic of power distribution	Degree of expertise Expertise is influenced by the extent to which local police units and communities have the appropriate training and experience
		Judgement ability Expertise is influenced by the extent to which local police units and communities have the ability for sound judgement

Table 5.3: Summary of {CATEGORY 3} concepts and their properties and dimensions (Cont.)

[CONCEPT]	~Property	≤ Dimension ≥
PARTICIPATIVE DECISION MAKING Governance requires considering participative decision making with local police units and communities	Understanding of context Context understanding is a characteristic of participative decision making	Degree of context variation Context understanding is influenced by the extent to which contexts vary from one community to another
	Competence Competence of police units and communities in decision making is a characteristic of participative decision making	Degree of competence of a community expert Competence is influenced by the extent to which a member of a community or police unit has the required 'wisdom' to take decisions
	Activity/participation Activity/participation of police units and communities in decision making is a characteristic of participative decision making	Frequency of activity/participation Activity/participation of local police units and communities in decision making is influenced by the frequency of interactions they make
Shared Decision making Impact Governance requires considering the shared decision impact	Easiness Easiness of dealing with a certain decision is a characteristic of shared decision making impact	Degree of easiness Easiness of dealing with a certain decision is influenced by the extent to which the decision making process is easy or difficult
	Performance efficiency Performance efficiency (on making sound decisions) is a characteristic of shared decision making impact	Range of performance efficiency Performance efficiency is influenced by the extent to which local police and communities are efficient in making decisions
	Proactive policing Proactive policing is a characteristic of shared decision making impact	Degree of proactivity Proactive policing is influenced by the extent to which response time and instant decisions are made
	Representative solutions Representative solutions (to communities and neighbourhoods) is a characteristic of shared decision making impact	Degree of representativeness Representative solutions is influenced by the extent to which a decision (solution) is representative (to communities and neighbourhoods)
	Speed Speed of decision making is a characteristic of shared decision making impact	Time-to-decision Speed of decision is influenced by the duration for a decision
	Consistency Consistency of decision making is a characteristic of shared decision making impact	Degree of consistency Consistency of decision making is influenced by the extent to which decision are consistent across communities and neighbourhoods
	Decision quality The quality of decision making is a characteristic of shared decision making impact	Range of types of phenomenon The quality of decision making is influenced by phenomena type Size of phenomenon The quality of decision making is influenced by phenomena size

Table 5.3: Summary of {CATEGORY 3} concepts and their properties and dimensions (Cont.)

[CONCEPT]	~Property	≤ Dimension ≥
MONITORING & CONTROL OF COMMUNICATION & DECISIONS Governance requires considering the monitoring and control of decision making	Complexity Complexity is a characteristic of monitoring and control of decision making	Degree of complexity Complexity is influenced by the extent to which monitoring and control is complex (especially with multiple accounts)
	Quality Quality of the decision and action mechanism is a characteristic of monitoring and control of decision making	Degree of quality Quality is influenced by the extent to which decision and action mechanism follow a standard practice
	Measures Measures is a characteristic of monitoring and control of decision making	Range of types of measures Measures are influenced by the type of measure used in monitoring and control
Escalation Governance requires considering the escalation mechanism in decision making	Issue criticality The issue criticality is a characteristic of escalation in decision making	Degree of criticality The issue criticality is influenced by the degree a phenomenon is serious (based on the type and size of the phenomenon)

5.5 {CATEGORY 4}: {COMMUNICATION PRIVACY}

The findings from grounded theory open coding have revealed the following two concepts that relate to the creation of a **{COMMUNICATION PRIVACY}**:

1. **MAINTAINING PRIVACY OF PARTICIPANTS**
2. **Ensuring Privacy**

The above two concepts have emerged from data collected from interviews and focus groups and were grouped under the category **{COMMUNICATION PRIVACY}** based on similarities on the level of properties and dimensions. Each of the concepts will be explained in the next few sections.

5.5.1 [Concept]: Maintaining Privacy of Participants

The [CONCEPT]: MAINTAINING PRIVACY OF PARTICIPANTS has emerged from data collected from interviews and focus groups and indicates that the public in the UAE have concerns about their privacy when communicating with the police on Twitter (See Appendix A for a more detailed analysis). For example, one of the participants in the first focus group has stated that *“privacy is a very important factor for individuals in terms of their physiological comfort in introducing and discussing phenomena which makes interaction more positive” (FG1 I1)*. Another interviewee has supported the same concept through highlighting that *“privacy is always a concern and I think twitter can be used for generic discussion and if there is something serious to report then I won’t use twitters” (I5)*. A third interviewee has mentioned that *“with information that may be carrying security related inputs, privacy becomes very important to maintain the security of the society and the security of interacting users in the account” (FG2 I3)*. These findings indicate that maintaining the privacy of participants is an important issue when planning for communication between the public and the police.

The data collected from the interviews and focus groups has revealed that the participants are concerned with threats to their privacy. The property ~Privacy threats has emerged from open coding of the data. For example, one of the participants in the second focus group has stated that *“privacy is very important as when a person provides important information; there may someone who is lurking for this person*

and hence *could be in danger*” (FG2 I1). Another interviewee has supported the same by stating that “you cannot afford *privacy* in such accounts; obviously everyone gets to see who you are when you interact with such accounts, unless you have a fake account” (I18).

The property **~Privacy threats** has one **≤Dimensions≥** that has emerged from the data collected. **≤Degree of privacy threat≥** shows that privacy threats can vary along of spectrum. For example, one of the interviewees has mentioned that “Twitter is a handle that people use to share opinions, for open discussions. Whatever we *publish* on twitter is what gets shared. So there is no encroachment of privacy” (I37). Another interviewee has suggested that “*privacy is important* to me, although we are free to say our *opinions with limitations*” (I47).

The data collected from the interviews and focus groups has also revealed that the participants have different perceptions when in relation to privacy. The property **~Privacy perception** has emerged from open coding of the data. For example, one of the interviewees has stated that “privacy would be an *issue* for me and I might not want to *speak my mind* sometimes. But, if it is urgent and requires help, it needs to be put there. Simply put, if we are in need, we will contact the department anyhow” (I31). Another interviewee has supported the same by arguing that “there should be no problem to *share thoughts* with the police and people should be proud of voicing it so I don’t see why privacy is an issue” (I26).

The property ~Privacy threats has one <Dimensions> that has emerged from the data collected. <Degree of privacy threat> shows that perceptions on privacy threats can also vary along of spectrum. For example, one of the interviewees has mentioned that *“privacy is a fickle thing so people should be wary if they think they are compromising their privacy by interacting with other people on topic posted. If they aren't ready to give it up, then don't bother interacting” (I41)*. Another interviewee has suggested that *“there is no privacy in twitter, so if you expect privacy we cannot use the account” (I10)*.

5.5.2 [Concept]: Ensuring Privacy

The [CONCEPT]: ENSURING PRIVACY has emerged from data collected from interviews and focus groups and indicates that the public have concerns about the implementation of privacy on Twitter in practice (See Appendix A for a more detailed analysis). For example, a participant in the first focus group has stated that *“one could preserve privacy in some areas through avoiding indication to places near their home – or saying there is this phenomenon next to my house exactly, to preserve the security of the public and avoid problems” (FG1 I4)*. A participant in the second focus group has also supported the concept through highlighting that *“the police as a security agency is responsible for maintaining security and stability of the society” (FG2 I4)*. Another participant in the second focus group has mentioned that *“privacy can be applied through a promise by the police pledged on the social account*

to maintain the privacy and *protect the identity of all members of the community who are interested in the interaction on the account*” (FG2 I1). These findings indicate that ensuring privacy of participants is a critical issue when planning for communication between the public and the police.

The data collected from the interviews and focus groups has revealed that the participants consider proper privacy legislations to be vital for implementing privacy in practice. The property **~Privacy legislation** has emerged from open coding of the data. For example, one of the interviewees has stated that *“privacy would always be a concern for social media. This wouldn’t be any different for accounts like that. But is I have signed up for this, then I have agreed to the terms and conditions”* (I39). Another interviewee has supported the same by stating that *“privacy on twitter is not an issue as long as I don’t violated any rules or law”* (I40).

The property **~Privacy legislation** has one **≤Dimensions≥** that has emerged from the data collected. The **≤Degree of suitability of privacy legislation≥** shows that privacy legislation extends a spectrum of how much it is suitable for social media (and Twitter in particular). For example, a participant in the first focus group has mentioned that *“have legislation that enforces privacy before starting the interaction and preserving rights for individuals who interact”* (FG1 I1). Another

participant in the first focus group has contested that by stating *“I don’t think there is a possibility to implement privacy in Twitter”* (FG1 I2).

The data collected from the interviews and focus groups has also revealed that the participants are interested in hiding identity in order to preserve privacy. The property **~Anonymity** has emerged from open coding of the data. For example, one of the interviewees has stated that *“if I am reporting something serious then I would call the police or go to the station rather than using twitter to remain unknown”* (I4). Another interviewee has supported the same by arguing that *“people hide their identity to speak something that is unacceptable, which they would not want to do for the police department. Plus, social media is public, if that would have been a concern; people wouldn’t have been using it”* (I31).

The property **~Anonymity** has one **≤Dimensions≥** that has emerged from the data collected. **≤Degree of anonymity≥** shows that perceptions on hiding identity varies along a spectrum. For example, one of the interviewees has mentioned that *“if people are so paranoid about privacy, they can just set up another account parallel to their personal account. It’s overall best to be careful with what you say. The police should monitor offensive material”* (I50).

The data collected from the interviews and focus groups has revealed that the participants are interested in having options when it comes to the implementation of privacy in practice. The property **~Optionality** has emerged from open coding of the data. For example,

one of the participants in the second focus group has stated that “[privacy] should be made *optional* ... because it may not be possible for a person to identify whether the subject is critical, unlike the police, who can identify all types of phenomena” (FG2 I3).

The property ~**Optionality** has one ≤**Dimensions**≥ that has emerged from the data collected. ≤**Set of options**≥ shows that privacy optionality extend a range of possible options. For example, one of the participants in the second focus group has mentioned that “[privacy] could be made *optional* in some conversations whilst interactions can be made visible for all to the community benefit such in the case of informing the public of an accident near them or low vision on the road at certain times of the year to avoid and reduce accidents” (FG2 I2).

The data collected from the interviews and focus groups has revealed that the participants consider the technology used to ensure privacy in practice to be of significant importance. The property ~**Technology** has emerged from open coding of the data. For example, a participant in the second focus group has suggested “*finding applications that can be integrated with the social networking systems to maintain the privacy and also recording the information and tweets that have been shared by the participants and observers of the account*” (FG2 I4).

The property ~**Technology** has the ≤**Degree of suitability of technology**≥ as a dimension, which shows that technology extends a spectrum of how much it is suitable for ensuring privacy. For example, a

participant in the first focus group has suggested “*alternative ways to preserve privacy such as communicating via email and messaging after initial interaction on Twitter*” (FG1 I2).

5.5.3 Summary of concepts in {CATEGORY 4}: {COMMUNICATION PRIVACY}

Table 5.1: Summary of {CATEGORY 4} concepts and their properties and dimensions

[CONCEPT]	~Property	≤ Dimension ≥
MAINTAINING PRIVACY OF PARTICIPANTS Communication privacy requires considering means to maintain privacy of participants on social media	Privacy threats Privacy threats is a characteristic of maintaining privacy of participants on Twitter (or social media in general)	Degree of privacy threat Privacy threats is influenced by the extent to which privacy of participants on Twitter (or social media in general) can be breached
	Privacy perception Privacy perception of participants is a characteristic of maintaining privacy on Twitter (or social media in general)	Range of privacy perception Privacy perception of participants is influenced by the range of views participants have on privacy on Twitter (or social media in general)
Ensuring Privacy Communication privacy requires considering means to ensure the implementation of privacy on social media	Privacy legislation Privacy legislation is a characteristic of ensuring privacy of participants on social media	Degree of suitability of privacy legislation Privacy legislation is influenced by the extent to which regulation is suitable and effective in ensuring privacy
	Anonymity Anonymity (i.e. the right of a participant to remain anonymous in social media interactions with the police) is a characteristic of ensuring privacy of participants on social media	Degree of anonymity Anonymity is influenced by the extent to which participants can remain anonymous in social media interactions with the police
	Optionality Optionality (i.e. the ability of a participant to have the option to be anonymous in social media interactions with the police) is a characteristic of ensuring privacy of participants on social media	Set of options Optionality is influenced by the set of options available for participants on social media in their interactions with the police
	Technology Technology is a characteristic of ensuring privacy of participants on social media	Degree of suitability of technology Technology is influenced by the extent to which the technology used for ensuring privacy is fit for purpose

5.6 {CATEGORY 5}: {INTELLIGENT POLICING}

The findings from grounded theory open coding have revealed the following four concepts that relate to the creation of a **{INTELLIGENT POLICING}**:

1. **Knowledge Sharing**
2. **Understanding Phenomena**
3. **Understanding Communities**
4. **Improvement through Intelligent Policing**

The above four concepts have emerged from data collected from interviews and focus groups and were grouped under the category **{INTELLIGENT POLICING}** based on similarities on the level of properties and dimensions. Each of the concepts will be explained in the next few sections.

5.6.1 [Concept]: Knowledge Sharing

The **[CONCEPT]: KNOWLEDGE SHARING** has emerged from data collected from interviews and focus groups to indicate a need for more knowledge sharing through interactions (as opposed to information), so as to provide more intelligent policing (See Appendix A for a more detailed analysis). For example, one of the interviewees has highlighted that the police *“should allow the public to post and comment on the topic so the police can actually get some ideas or tips from the public”*

(I47). Another participant in the second focus group has supported the same concept through suggesting *“there must be **monitoring and sharing of reports** from these neighbourhood police centres that made these decisions with the main police centre for sharing and assurance of the quality of decisions and the action mechanism” (FG2 I1)*. These findings indicate that communication between the police and the public should allow for more knowledge sharing enabling more intelligent policing.

The data collected from the interviews and focus groups has revealed that the value of knowledge is fundamental to knowledge sharing, and hence intelligent policing. The property **~Value of knowledge** has emerged from open coding of the data. For example, a participant from the first focus group has argued that *“these accounts could lose some of the interaction if there are some individuals who give much **irrelevant talk** which does not have **value** and upsets some other participants” (FG1 I3)*. Another participant from the second focus group has supported this argument by positing that *“from security and financial perspectives, [**customisation**] saves the police effort and the burden of hiring sources for information because when interacting with the public [the police] **secured information from true sources** in members of the community” (FG2 I2)*.

The property **~Value of knowledge** has one **<Dimension>** that has emerged from the data collected. **<Extent of value>** indicates that the value of knowledge extends a range depending on how valuable this

knowledge is to the police. For example, a participant in the first focus group has explained that *“If the discussions and **interaction** are **ineffective** in a subject then in this case it should be addressed by more **informational depth**”* (FG1 I4). Another participant from the second focus group has supported this dimension by stating that *“having **customised accounts** enable decision-makers to be **fully aware** of the **problems and phenomena that are happening**”* (FG2 I1).

The data collected from the interviews and focus groups has also showed that similar to the need for two-way communication as discussed in Section 4.2, there is a need for two-way knowledge sharing between the police and the public. The property **~Two-way knowledge sharing** has emerged from open coding of the data. For example, one of the interviewees has argued that *“... [the police] has sufficient **knowledge and intelligence** but it also withholds a lot of information for **safety reasons**. I do not see a way where both sides would be completely satisfied but the police should do its best to be as **transparent** as possible with the public”* (I28). This supports the argument by another interviewee who has stated that *“If its only **broadcasting** the department will never know what the public think about them and can never **hear our views**”* (I1).

The property **~Two-way knowledge sharing** has one dimension that emerged from the data collected. The **≤Dimension≥** indicates that the concept of knowledge sharing extends a **≤Degree of Two-way**

knowledge sharing≥. For example, an interviewee has highlighted that “so far it doesn’t help, we need to *interact* more and get *insightful information*” (I30). Another interviewee has also supported this dimension by stating that “current *information* is *not sufficient*. More *interactions* needed” (I35).

The data collected from the interviews and focus groups has revealed that interaction is equally fundamental to knowledge sharing, and hence intelligent policing. The property ~**Interaction** has emerged from open coding of the data. For example, one of the interviewees has argued that “current *interactions* on twitter can give *additional knowledge* not only to the public but at the same time to the police itself” (I40). Another interviewee has supported this argument by positing that “any *information* provided on *real* time basis can help the department perform better and I am sure that everybody would be interested to know the police’s view on what’s happening. So, the *information* on twitter will always be *useful* and those who do not need the information can *un-follow* anytime they want” (I31).

The property ~**Interaction** has one ≤**Dimension**≥ that has emerged from the data collected. ≤**Degree of interaction**≥ indicates that knowledge sharing extends a range depending on the depth of interactions. For example, one of the interviewees has commented on the proof of concept that “it looks ok, but *more information* can make it *more interactive*. It seems somewhat generic now” (I21). Another

interviewee has supported this dimension by stating that *“current interactions do help the police, but they will have to improve on the number of interactions”* (I37).

5.6.2 [Concept]: Understanding Phenomena

The [CONCEPT]: UNDERSTANDING PHENOMENA has emerged from collected data to indicate the need for more in depth knowledge to be able to understand the phenomena discussed on the Twitter account (See Appendix A for a more detailed analysis). For example, a participant in the second focus group has highlighted the need for *“participative, interactive conversations ... to identify the problems and phenomena that cause inconvenience and concern to the public”* (FG2 I3). Another interviewee has supported the same concept through stating that *“the current account has content with the same 3-4 points such as begging, gathering late at night, road safety and traffic, these points do help the police but are too generic”* (I1). These findings indicate that communication between the police and the public should allow for ways to share more in depth knowledge to enable more understanding of the phenomena discussed, and hence more intelligent policing.

The data collected from the interviews and focus groups has revealed that the depth of knowledge sharing is vital for understanding the phenomena discussed. The property ~Sufficiency has emerged from open coding of the data. For example, a participant from the first focus group has argued that *“some topics require more depth in terms of*

knowledge, and the available information by the public may not be enough, thus I suggest to enrich some important issues that need important decisions with more research and investigation” (FG1 I2). Another participant from the second focus group has supported this argument by arguing the need to “engage [the public] in real participation in successful interactions to obtain the required information about phenomena” (FG2 I5).

The property ~Sufficiency has one ≤Dimension≥ that has emerged from the data collected. ≤Degree of sufficiency≥ indicates that the sufficiency of knowledge extends a range depending on how this knowledge is enough to understand the phenomena under discussion. For example, a participant in the first focus group has explained that “the information is sufficient depending on the need in which the public may interact with the police through the account” (FG1 I2). Another interviewee has supported this dimension by stating that “it does help in a way now, but can be more specific. For instance about late gathering they could say where exactly it happens for the police to take action” (I10).

The data collected from the interviews and focus groups has also showed that similar to the need for sufficient knowledge, there is a need for the knowledge and information communicated to be accurate. The property ~Accuracy has emerged from open coding of the data. For example, one of the participants in the second focus groups has

explained that *“when there are active interactions, it allows the police to be fully aware with phenomena and events that happen in neighbourhoods through a tweet or a photo, so they can get ‘rapid reporting’ feature, which allows them to control these events and phenomena accurately and fast, for example an interaction on the subject of reporting a fire through a tweet, whilst another posts a photo of the fire, so the fire brigade is able to reach the scene and a have an accurate pre-description, further losses can be avoided”* (FG2 I2).

The property **~Accuracy** has one dimension that emerged from the data collected. The **≤Dimension≥** indicates that the accuracy of knowledge shared extends a **≤Degree of accuracy≥** which is critical for understanding the phenomena under discussion. For example, one of the participants in the second focus group has highlighted that the account *“can activate an excellent service which determine the locations of events or problems or phenomena accurately through public interaction”* (FG2 I2).

5.6.3 [Concept]: Understanding Communities

The **[CONCEPT]: UNDERSTANDING COMMUNITIES** has emerged from collected data to indicate a need for more understanding the communities, so as to have more intelligent policing (See Appendix A for a more detailed analysis). For example, an interviewee has highlighted that *“interactive discussions are always better as it gives the chance to understand more the people and keep asking more related questions”*

(I26). Another participant in the second focus group has supported the same concept by suggesting that the police “*can work the psychological condition of the community in the area of the account through their tweets*” (FG2 I3). Another interviewee has highlighted that “*interaction between the police and Twitter users is more effective as it is considered a tool to listen to the public and understand their problems and needs*” (I27). These findings indicate that knowledge sharing through communication between the police and the public should allow for more understanding of the communities in order to enable more intelligent policing.

Similar to the concept of understanding phenomena, the data collected from the interviews and focus groups has revealed that the depth of knowledge sharing is vital for understanding the communities and their problems, and hence intelligent policing. The property ~Sufficiency has emerged from open coding of the data. For example, one of the interviewees has explained that “*it’s a mix of both useful and generic messages for the public; however the department should always have an eye all the updates and act accordingly to each message and interaction*” (I3). Another interviewee has also stated that “*sufficient knowledge to all is very important so people can unite and fight any problems or issues that the country’s facing if any issue arises*” (I47).

The property ~Sufficiency has one ≤Dimension≥ that has emerged from the data collected. ≤Degree of sufficiency≥ indicates that

the sufficiency of knowledge extends a range depending on how this knowledge is enough to understand the communities and their problems. For example, a participant in the first focus group has argued that *“the proposed information is very sufficient to make decisions in simple subjects but the important decisions need a depth in information, wider exposure and more specific analysis due to lack of knowledge of the cultural and scientific levels of the interacting users” (FG1 I2)*. Another interviewee has supported this dimension by stating that *“interactions on twitter can contain helpful information for the police and people, though it can also have irrelevant messages” (I33)*.

Similar to the concept of understanding phenomena, the data collected from the interviews and focus groups has showed that similar to the need for sufficient knowledge, there is a need for knowledge and information communicated to be accurate, as shown in Table 4.5. The property **~Accuracy** has emerged from open coding of the data. For example, a participant in the second focus group has argued that *“there is another point that must be verified which is the correctness of the information and the credibility of the people that participate on the account through their whereabouts, as there are people who search for accounts that are inactive only to tamper with the publication of rumours and incorrect information” (FG2 I4)*.

The property **~Accuracy** has one dimension that emerged from the data collected. The **≤Dimension≥** indicates that the accuracy of

knowledge shared extends a **≤Degree of accuracy≥** which is critical for understanding the communities and their problems. For example, one of the participants in the second focus group has highlighted that *“the police could provide **discussion panels** to get accurate information that lead to **effective decision making**” (FG2 I5)*. This supports the view that has been presented by another participant in the first focus group who has argued that *“there is no ways to preserve privacy as it is a public interaction channel and there would be individuals who may put **untruthful subjects**” (FG1 I4)*.

The data collected from the interviews and focus groups has revealed that in order to understand the communities, it is important to consider the different perspectives. The property **~Perspectives** has emerged from open coding of the data. For example, one of the interviewees has argued that *“after the police department works for the wellbeing of the public and they have the **right to raise their voice**” (I2)*. Another interviewee has supported this argument by explaining: *“so that the police can **listen** to their concerns and work on them” (I37)*.

The property **~Perspectives** has one **≤Dimension≥** that has emerged from the data collected. **≤Range of perspectives≥** indicates that understanding communities extends a range of different perspectives. For example, one of the interviewees has commented on the proof of concept that *“we all have **different views**” (I11)*. Another interviewee has supported this dimension by stating that *“we can get*

the updates on the news portals, it would be better if they listen to what we have to say” (I31).

5.6.4 [Concept]: Improvement

The **[CONCEPT]: IMPROVEMENT** has emerged from data collected from interviews and focus groups to indicate that knowledge sharing creates improvement through more intelligent policing (See Appendix A for a more detailed analysis). For example, one of the interviewees has argued that the police *“the police should start allowing the public to participate and interact more, so this can serve as guidance for improvement based on the opinions and feedback of the public” (I33).* Another interviewee has supported the same concept through suggesting *“people should also interact so that the police gets to see their problem areas and works for their improvement” (I46).* A third interviewee has suggested to *“allow the public to participate and interact more to serve as guidance for improvement based on the opinions and feedback of the public” (I49).* These findings indicate that interaction between the police and the public creates improvement through more intelligent policing.

The data collected from the interviews and focus groups has revealed that intelligent policing provides practicality to the solutions. The property **~Practicality** has emerged from open coding of the data. For example, a participant from the first focus group has argued that

*“helps in understanding and addressing phenomena with **practical methods**” (FG1 I2).*

The property **~Practicality** has one **≤Dimension>** that has emerged from the data collected. **≤Degree of practicality>** indicates that improvements extends a range practicality. For example, an interviewee has explained that *“I don’t think they can provide too much **intelligence through Twitter**; it has to be done over the **traditional way** either by phone or in person so get more info” (I11).*

The data collected from the interviews and focus groups has also showed that intelligent policing provides enhances innovation. The property **~Innovation** has emerged from open coding of the data. For example, one of the participants in the first focus group has argued that *“interactive conversations help to provide **innovative solutions**” (FG1 I3).*

The property **~Innovation** has one dimension that emerged from the data collected. The **≤Dimension>** indicates that innovation varies along a spectrum of **≤Degree of innovation>**. For example, an interviewee has highlighted that *“the police should allow more **interaction and participation through discussions** to get **ideas from the general public**” (I48).*

The data collected from the interviews and focus groups has revealed that improvement through intelligent policing is associated with lessons learnt. The property **~Lessons learnt** has emerged from open coding of the data. For example, a participant in the second focus

group has argued that “the police can build a *knowledge base* that could be needed in the future to support the decision-maker in selecting a *solution* of a problem or phenomenon” (FG2 I2). Another participant in the second focus group has explained that “when phenomena *repeat*, there will be the *knowledge and previous solutions* among neighbourhoods, which will *speed* up solutions and *satisfy* the communities and the public with police work and consequently create an *interactive and participative* environment between [the public and the police]” (FG2 I1).

The property *~Lessons learnt* has one *≤Dimension>* that has emerged from the data collected. *≤Extent of learning from experiences>* indicates that lessons learnt extend a range depending on the depth of learning from previous experiences. For example, a participant in the first focus group has explained that lessons learnt “provides the opportunity to access and participate in *knowing what could happen in the future* in the neighbourhood they are living in, which could prepare them to know the way to address it when it happens to them” (FG1 I2). Another interviewee has supported this dimension by suggesting that the police “must create a *centre* concerned with *collection and analysis of all the information and the decisions* that have been taken [from the different neighbourhoods] and do studies that may reduce or avoid the *occurrence of such phenomena* in this residential neighbourhood, or other residential neighbourhoods in the future” (FG2 I5).

5.6.5 Summary of concepts in {CATEGORY 5}: {INTELLIGENT POLICING}

Table 5.1: Summary of {CATEGORY 5} concepts and their properties and dimensions

[CONCEPT]	~Property	≤ Dimension ≥
Intelligent policing requires considering facilitating knowledge sharing between the police and members of the public and communities	Value of knowledge Value of knowledge is a characteristic of knowledge sharing	Extent of value The value of knowledge is influenced by the degree to which knowledge brings useful insights to the police
	Two-way knowledge sharing Two-way knowledge sharing is a characteristic of knowledge sharing	Degree of two-way knowledge sharing Two-way knowledge sharing is influenced by the extent to which the involved parties are sharing knowledge
	Interaction Interaction is a characteristic of knowledge sharing	Degree of interaction Interaction is influenced by the quantity and quality of communication
Understanding Phenomena Intelligent policing requires considering methods for facilitating the understanding of phenomena	Sufficiency Sufficiency of knowledge is a characteristic of understanding phenomena	Degree of sufficiency Sufficiency of knowledge is influenced by the extent to which the knowledge shared is appropriate for understanding a phenomena
	Accuracy Accuracy of knowledge is a characteristic of understanding phenomena	Degree of accuracy Accuracy of knowledge is influenced by the extent to which knowledge shared is truthful for making a decision
Understanding Communities Intelligent policing requires considering methods for facilitating the understanding of communities	Sufficiency Similar to understanding phenomena, the sufficiency of knowledge is a characteristic of understanding communities	Degree of sufficiency Sufficiency of knowledge is influenced by the extent to which the knowledge shared is appropriate for understanding a community
	Accuracy Similar to understanding phenomena, the accuracy of knowledge is a characteristic of understanding communities	Degree of accuracy Accuracy of knowledge is influenced by the extent to which the knowledge shared about a community is truthful for making a decision
	Perspectives Different perspectives is a characteristic of understanding communities	Range of perspectives Perspectives is influenced by the range of different views on a phenomenon

Table 5.5: Summary of {CATEGORY 5} concepts and their properties and dimensions (Cont.)

[CONCEPT]	~Property	≤ Dimension ≥
Improvement Intelligent policing requires considering methods for improvement	Practicality Practicality is a characteristic of improvement	Degree of practicality Practicality is influenced by the extent to which improvement is practical
	Innovation Innovation in solutions is a characteristic of improvement	Degree of innovations Innovation is influenced by the extent to which solutions are creative
	Lessons learnt Lessons learnt is a characteristic of improvement (e.g. knowledge base)	Extent of learning from experiences Lessons learnt is influenced by the capacity for learning from previous experiences

5.7 Summary

The findings from data analysis have uncovered five main areas that need to be considered when developing a framework for using Twitter as a communication instrument to support the decision making process in police organisations in the UAE:

- Communication strategy: needs to consider context dependency of the communication through communication filtering and customisation, while maintaining a single point of access for the public. Tagging technology in social media (e.g. hashtags in Twitter) can be used to achieve both filtering/customisation and single point of access.
- Communication engagement: through enabling two-way communication (as opposed to one-way broadcasting) and participation in order to empower and motivate real interactive

communication between the police and communities and members of the public, which is valuable to both.

- Governance: needs to consider context dependency of the decision making process through sharing decision power and decentralisation of decision making to empower local police stations and members of communities to deal with issues that can be dealt with locally, while critical issues are escalated to headquarters. This requires the monitoring and control of both the decisions taken by, and communication between, the local police and members of the community.
- Communication privacy: need to consider maintaining and implementing privacy for participants through increasing awareness of the communities and the public, developing effective privacy legislation, allowing for anonymity in communication, and using suitable technology to ensure privacy.
- Intelligent policing: through engaging communities and members of the public in knowledge sharing to understanding trends in phenomena and collecting lessons learned to devise best practices in the future.

These five main areas constitute the pillars for a practical framework for using social media as a communication instrument in supporting decision making, as will be discussed in more detail in the next chapter. Each of the areas is to be explored in-depth in comparison

to related literature in order to be able to generalise the findings to other nations, cultures and contexts. The results of the discussion of each of the areas will be then formulated in the form of one or more propositions to guide the development of a framework for using Twitter as a communication instrument in supporting decision making in police organisations.

Chapter VI – Findings and Discussion

The research has implemented a proof of concept based on findings from comparing and contrasting models and practices at the UAE police, with models, trends and practices discussed in the literature review in Chapter II. The proof of concept has encompassed a conceptual framework for using Twitter as a communication instrument to support decision making processes at UAE police, addressing two main areas of focus as discussed in Chapter IV: the communication approach and governance.

The evaluation of the proof of concept has uncovered five categories that represent the logical structure for designing a framework for using Twitter as a communication instrument to support decision making processes at UAE police, as described in Chapter V. The main components of the framework are namely, Communication Strategy, Communication Engagement, Governance, Communication Privacy, and Intelligent Policing, as illustrated in Figure 6.1.

The purpose of this chapter is to discuss the findings from the analysis of data collected in the evaluation of the proof of concept, in comparison to related literature. The discussion is grouped under the five pillars of the framework.

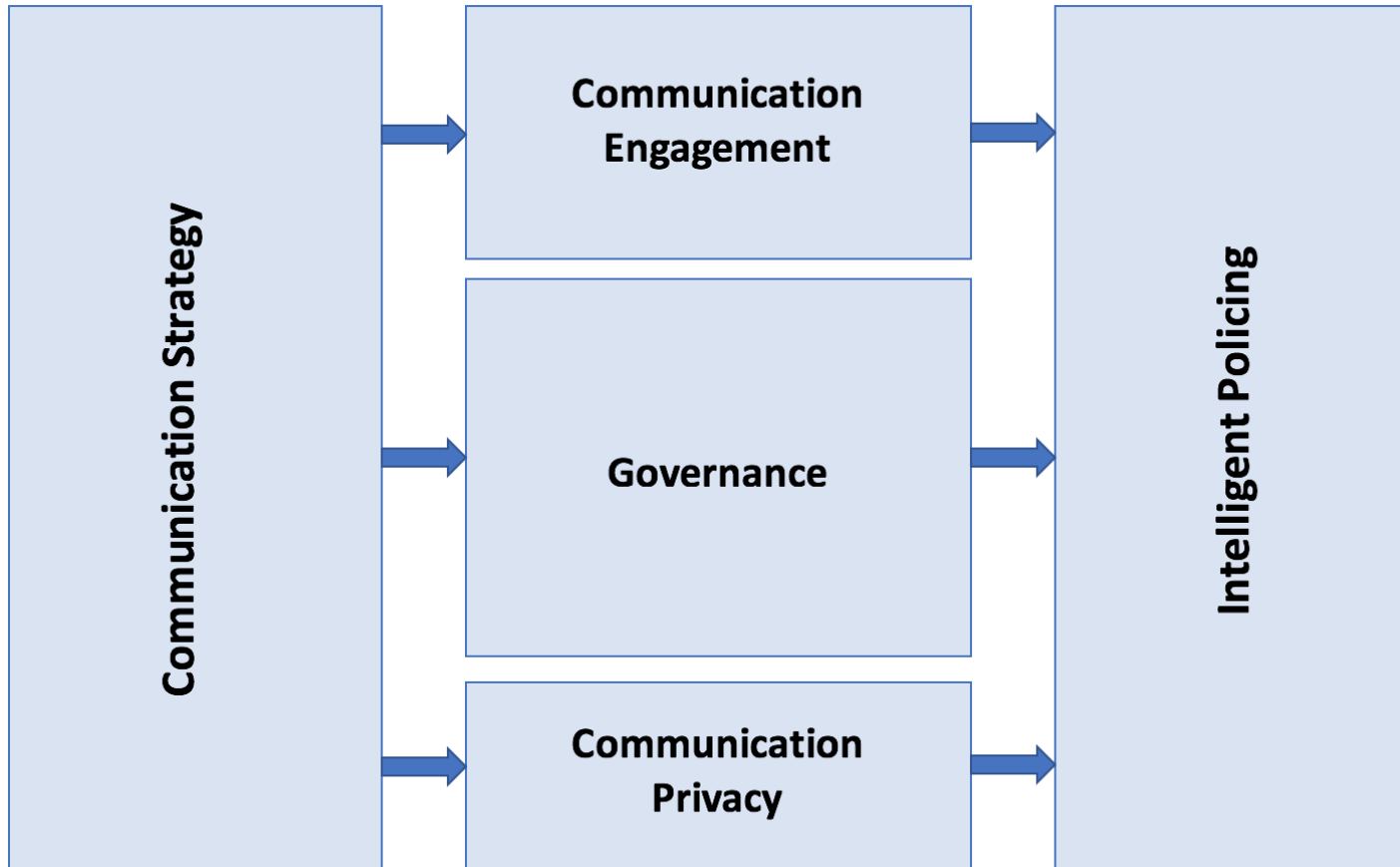


Figure 6.1: Framework for using social media as a communication instrument in supporting decision making processes

6.1 Discussion for {CATEGORY 1}: {COMMUNICATION STRATEGY}

Analysis of interviews and focus groups has uncovered concepts around developing a communication strategy for using Twitter for the purpose of supporting decision making processes at the UAE police. The data has shown that addressing issues related to context dependent communication is critical for developing such communication strategy. Findings have shown that this could be achieved by considering the simplification of interaction through filtering communication and the customisation of communication channels. Yet, Findings have also shown a need for information integration and communication feedback.

This section discusses the emergent concepts under communication strategy in relation to relevant research in the literature

6.1.1 Simplification of interaction through filtering communication

The findings have shown that communication between the public and the police is context dependent. This has been evident in the nature of issues that has been raised by the public and communicated on the Twitter proof of concept. Some of these issues are neighbourhood dependent and others are topic dependent. Neighbourhoods differ from each other in the type of phenomena and issues they have, as neighbourhoods in the UAE often have different actions and interactions influenced by the cultures of people living in it. This is especially relevant

to the UAE (and other Gulf countries), as more than 80% of the population are expatriates coming from different countries, and hence different cultures, ethics and attitudes (Sujit, 2011). Observations from the proof of concept, for example, has shown that whereas some neighbourhoods have significant issues with young and teenagers hanging around in the streets up to early hours of the morning (and accordingly issues of noise, vandalism, anti-social behaviour, etc. exist), other neighbourhoods do not have such issues. Moreover, issues are topic dependent, and hence the interest of users who are interacting on Twitter are different. For example, some members of the public would be interested in issues related to traffic, while others may be interested in issues different topics related for instance to night gatherings, and so forth.

Findings from the evaluation of the proof of concept have shown that the wide variation in issues, and hence the interest of members of the public in engaging in communication around these issues, require the simplification of interactions on Twitter through filtering communication. These findings are addressed in the literature in relation to 'accessibility' to information. Communities and members of the public are increasingly expecting more in terms of accessibility to information from the police. This is usually evident in countries that adopt legislations for freedom of information such as many European countries including the UK. In such countries, open communication and variation in channels between the police and the public can be observed. There is

increasing indication that this information openness and accessibility convenience is becoming the norm, both for strategic and ethical reasons (e.g. Kirby and McPherson, 2009; Heverin and Zach, 2010; Baker and Hyde, 2011; Crump, 2011). Expectations of the public are also changing in terms of quality (and not only quantity) of information. Whereas poor information quality used to be the norm in the past, today police organisations are showing much higher level of professionalism in terms of quality of information communicated (Cooke & Sturges, 2009). It is critical, therefore, not only to enable members of the public to communicate using the medium that is convenient to them, but also enable them to engage in the topics that are of interest to them through incorporating the different interests and preferences of communities and members of the public within an improved framework in terms of type of media and variation in channels. In order to reach this, communication needs to be filtered in order to simplify interactions between the public and police. In Twitter this can be achieved through using the hashtag technology to simplify communication related to a certain neighbourhood or related to a specific topic, as will be discussed in the next section. Similarly, simplification of communication can be achieved in other social media through tagging technology.

Proposition 1: a practical framework for using Twitter as a communication instrument to support decision making should consider simplification of interaction through filtering communication.

6.1.2 Customisation/personalisation of communication

Following from the discussion above, when designing platforms and methods for communication between the police and the public, ‘no one solution fits all’. It is useful to identify and distinguish between issues relevant to specific neighbourhoods and/or issues relevant to a specific topic of interest, and customising communication accordingly, towards maximising interactions on Twitter (and other social media), and therefore maximising the value from communication with communities and members of the public.

The customisation of communication with customers has been covered in the literature by many researchers and practitioners (see for example: Peltier *et al.*, 2003; Gurau, 2008). Peltier *et al.* (2003) For example, argue that organisations should create customer communication strategies that customises communication based on information collected on the individual level – both through conventional and electronic means. The customisation-based strategies could thus use social media to create interactions with communities and members of the public (Peltier *et al.*, 2003).

Based on the context dependency concept, therefore, policy makers should consider the customisation of communication between the police and members of the public and communities according to neighbourhood and/or topics. Cooke and Sturges (2009) argue that it is important to distinguish between “what is in the public interest” and “in

what the public is interested in”, in the communication between the police and communities and members of the public (Cooke & Sturges, 2009 p. 418). Findings from the data have shown that this would result in facilitation of the interactions between the public and the police. This could be achieved, for instance, through using ‘tagging technology’. For example, in Twitter the use of relevant hashtags allows for simplification of interactions through filtering communication, and hence easier accessibility and interaction in specific areas of interest or related to specific neighbourhoods. This requires a database-driven segmentation method to communication strategy (Peltier *et al.*, 2003).

Proposition 2: a practical framework for using Twitter as a communication instrument to support decision making should consider customisation of communication.

6.1.3 Information integration

Findings from the evaluation of the proof of concept have shown, however, that it is useful to have all information on the communication platform to be integrated, allowing for a single-point of access. This contrasts with the concepts of simplification of interaction through filtering communication and the customisation of communication channels. Whereas, the general view of the interviewees and focus groups has been for better accessibility through filtering communication and better interaction through customisation of communication.

A solution that realises both the concepts for customisation and integration may be possible using social media. Accessibility of information could be through a single-point of access, yet customised according to neighbourhoods or topics, as discussed previously. This is referred to by Peltier *et al.* (2003) as Integrated Marketing Communication (IMC), a concept of marketing communication planning that identifies value from integrating different strategies to maximise communication impact. For example, on Twitter this could be achieved by having an integrated communication platform for all interactions between the public and the police and sub-accounts and hashtags (or tags in other social media) for the customisation of communication.

Proposition 3: a practical framework for using Twitter as a communication instrument to support decision making should consider information integration.

6.1.4 Synchronous feedback

The findings have also shown that feedback from the police to the public is important in encouraging and maintaining communication between the parties. According to participants in the interviews and focus groups, feedback on issues raised by the public could be done using different media or channels (depending on suitability), yet it has to be immediate.

In management theory, the literature refers to two main types of decision making: asynchronous and synchronous. Asynchronous decision

making originally referred to models or settings that support “same-place-different-time” decision making, whereas synchronous decision making referred to models or settings that support same-place-same-time (i.e. “face-to-face”) decision making (Turban *et al.*, 2011 p. 138). These notions, however, emerged in time when group decision support systems (GDSS) and computer supported cooperative work (CSCW) were still at early maturity phases and Internet and email were non-existent or in early days.

At present, supported by Internet and mobile technologies, especially social media, synchronous decision making models have evolved beyond face-to-face through the notion of “virtual teams” (Turban *et al.*, 2011 p. 145). Internet and social media, therefore, allow for instantaneous, face-to-face-like communication with the public, and accordingly fast response decision making.

The current framework adopted by the UAE police is based on asynchronous decision making model. However, the asynchronous decision making arguably lacks speed of response and context sensitivity that are needed in modern police organisations. This is evident in the evaluation of the proof of concept, which has suggested that for more effective decision making the UAE police should adopt a more responsive (synchronous) model that allows communities and members of the public not only to participate in the decision making process, but

equally importantly to see that their participation makes a difference (Ratcliffe, 2016).

Two-way synchronous decision making is in line with new trends in decision making increasingly adopted by police organisations in other countries such as the USA and the UK, especially as it focuses more on addressing issues related to decision making models discussed in the literature such as the need for fast response (Van de Walle & Turoff, 2008), and hence real time knowledge and business intelligence (Burstein *et al.*, 2008; Burstein & Holsapple, 2008b) as will be discussed in section 6.5. In addition, such framework would arguably engage the public in the decision making process following a more customer centred approach to decision making (Baker & Hyde, 2011; Yilmaz, 2013), as will be discussed in more detail in Section 6.3.

A two-way, synchronous decision making framework, however, faces the dual challenge of encouraging participation of local communities in a real dialogue and engaging police personnel in two-way communication, as will be discussed in Section 6.2.

Proposition 4: a practical framework for using Twitter as a communication instrument to support decision making should consider two-way synchronous feedback.

6.2 Discussion for {CATEGORY 2}: {COMMUNICATION ENGAGEMENT}

Analysis of interviews and focus groups has uncovered concepts related to engaging the public in communication with the police using Twitter towards supporting decision making processes in the police in the UAE. The data has shown that effective communication engagement needs to address issues of allowing for real interaction through two-way communication and consequently the need for communication motivation towards bringing communities and the police closer.

6.2.1 *Two-way communication*

The findings have shown that communication engagement of the public is dependent on how interactive the communication is. According to the participants in the interviews and focus groups, people prefer two-way communication, as opposed to one-way broadcasting from the police to the public on the Twitter communication platform. However, Findings have also shown that the participants are aware that some of the sensitive issues (e.g. national security related issues) should not allow for two-way interactions.

Participants stress the critical importance for creating a real interactive platform through enabling two-way communication between the public and the police. These findings are in line with an expanding scope of public expectations in terms of engagement (Yilmaz, 2013), especially with continuous advancements in information and

communication technology, particularly the Internet and social media. The public is increasingly expecting to be able to engage with the police in two-way communication, as opposed to being merely recipients of one-way information.

The argument for two-way communication engagement has been covered in the by both practitioners and researchers literature since the commercialisation of the Internet (see for example Cooke & Sturges, 2009; Bertot *et al.*, 2012; Yilmaz, 2013). However, what is new is the propagation of social media, which arguably offer better platforms for two-way communication. Bertot *et al.* (2012) argue that the primary strength and appeal of social media as a communication instrument for government organisations lies in the capability to generate an interactive and immediate dialogue. Hence, the tapping of police organisations into social media in order to engage with local communities as well as the public in general (Heverin & Zach, 2010; Crump, 2011). In recent years, police organisations have been increasingly providing the public with more open and instantaneous access to information, with options for two-way interaction with local communities and the public in general (Cooke & Sturges, 2009; Yilmaz, 2013).

Following from the above discussion, enabling two and multi-way communication, particularly through social media represents an opportunity for police organisations for developing a framework that is mutually beneficial to both the police and the public. On the one hand,

the public benefits from two and multi-way communication through accessing information of interest and engaging with the police as well as other members of the public in discussing topics of interest. On the other hand, the police have access to intelligence necessary for decision making and tools for managing communication. Social media provide platforms for realising these benefits through engaging the public in a dialogue and not only conveying messages to the public (Cooke & Sturges, 2009; Deneff *et al.*, 2011; Van den Born *et al.*, 2013).

Proposition 5: a practical framework for using Twitter as a communication instrument to support decision making should consider two-way communication.

6.2.2 Communication motivation

The findings have shown that the public in the UAE need to be motivated to communicate with the police on Twitter. Both the two-way communication (discussed in the last section) and allowing more participation of the public in the decision making process and reaching collective solutions (that will be discussed in Section 6.3) has been related to the need for finding ways to motivate the public to interact and share knowledge with the police on Twitter and arguably similarly on other social media channels.

The reason for this is that the success of communication channels using social media in particular (more than other type of media) is dependent on the interactions of users. Social media is dependent on

user-generated content – any content that has been contributed by members of the public and communities rather than professionals (Bertot *et al.*, 2012). Whereas conventional type media primarily based on being a broadcast (one-to-many) channel, social media is primarily based on being a dialogue (many-to-many) interaction; allowing users from different locations to come together to contribute valuable information, knowledge and insights from different perspectives on an issue and potentially participate in finding solutions to challenging issues through the diversified expertise and experiences they bring (Brabham, 2008; Porter, 2010; Bertot *et al.*, 2012; Ratcliffe, 2016).

Following from the above discussion, encouraging communities and members of the public to participate in a real two-way interactions with the police would arguably be beneficial for both parties (Toch, 2008; Wood *et al.*, 2008; Yilmaz, 2013). The participation of local communities and the public would create strong relationships, and hence improve institutional legitimacy and achieve better results in fighting crime (Peaslee, 2009), while engaging police personnel would capitalise on their experiences and reduce opposition to change (Toch, 2008). As a result, more participation of the public will be arguably bringing communities and the police closer.

Proposition 6: a practical framework for using Twitter as a communication instrument to support decision making should consider communication motivation.

6.3 Discussion for {CATEGORY 3}: {GOVERNANCE}

Analysis of interviews and focus groups has uncovered concepts related to the governance of communication on Twitter towards supporting decision making processes in the police in the UAE. The data has shown that communication governance, similar to communication strategy, should be considering issues of the dependency of the decision making process on the context. Findings have shown the need to consider the distribution of decision making power through decentralisation and the participation of communities and the public in general in the decision making process. In addition, governance of communication and decision making requires monitoring and control not only of the effectiveness of communication and decision making but also the impact of shared decision making and the escalation mechanism and procedure.

6.3.1 Decentralisation and participation in decision making

The findings have shown that the decision making process is dependent on the context of the issues addressed. Similar to the context-dependency of the communication between the public and the police on Twitter, the decision making process is arguably dependent on the neighbourhood and/or the topic addressed. In addition, the decision making process is dependent on the criticality of the issues addressed.

Based on the concept of context-dependency of decision making, the distribution of the decision making powers should be considered, as

per the findings from the evaluation of the proof of concept. This could be achieved through decentralisation of decision making to local and community police stations and even to participative and shared decision making with the communities and public. Ratcliffe (2016) argues that communities and members of the public are suitable decision makers where they can add value (especially that they understand the inherent context better). Yet they may not be always necessary decision-makers in all issues (Ratcliffe, 2016).

The effectiveness of a decision making process is directly related to those who make the decision. Whereas the literature shows an apparent trend among researchers and practitioners towards considering decision making approaches based on groups or teams to be more effective than approaches based on a single person decision making (Carlsson & El Sawy, 2008; Ratcliffe, 2016), there is yet no consensus on whether a centralised or a decentralised approach to decision making is more effective (Ratcliffe, 2016). Each approach come with a set of advantages and disadvantages. Therefore, police organisations should consider these advantages and disadvantages before selecting an approach.

Centralisation approaches to decision making often put the decision making process at the top of an organisation's hierarchy, whereas decentralisation approaches to decision making distributes the decision making process locally where it is closely related. Each has its

own advantages and disadvantages. While centralisation approaches, for example, arguably improve coordination, they are criticised for hindering the adaptability that decentralisation approaches can provide and vice versa (Kumar & Havey, 2013). Moreover, centralisation approaches arguably have better economies of scale due to centralisation of decision making personnel, while hindering the speed of response and context sensitivity that decentralisation approaches can provide and vice versa (Carlsson & El Sawy, 2008).

The current framework adopted by the UAE police is based on a centralisation approaches to decision making. However, through observations in practice it could be argued that the current centralisation approach lacks flexibility, speed of response, and context sensitivity that are needed in modern police organisations. This is also evident in results from the evaluation of the proof of concept, which suggest that the UAE police should consider adopting a more customer-focused decision making approach not only through customisation of communication with communities and members of the public (see Section 5.1), but also through the distribution of decision making powers and decentralisation of the decision making processes.

These findings are in line with current trends in law enforcement agencies and police organisations for more customer-focused (Baker & Hyde, 2011; Yilmaz, 2013; Ratcliffe, 2016), flexible (Kumar & Havey, 2013; Ratcliffe, 2016) decision making with less formal structures

(Yilmaz, 2013; Ratcliffe, 2016). In order to adapt to changes in their environment, law enforcement agencies have been applying essential reforms with the aim to create more “democratic, accountable, participative and effective” models for decision making (Yilmaz, 2013). Accordingly, decision making models that focus on communities and members of the public are increasingly adopted by police organisations as a result of more decentralised (customer) focused approaches to decision making (Ratcliffe, 2016).

A customer-focused model entails moving towards localism, and hence decentralisation of decision making, in order to engage communities and build closer relationships with members of the public (Peaslee, 2009; Yilmaz, 2013; Ratcliffe, 2016). Yet, coordination among local police centres and community police units is critical in issues with wider effects on the UAE police as a whole. With a decentralised model, policy makers should address anticipated challenges to transforming police organisations, in relation to factors such as leadership support, resistance to change and most importantly the availability of skilled personnel (Coleman, 2008; Yilmaz, 2013).

Proposition 7: a practical framework for using Twitter as a communication instrument to support decision making should consider decentralisation of decision making and participation of communities and members of the public in the decision making process.

6.3.2 Monitoring and control of communication and decision making

In association with distributed decision making through decentralisation and participative and shared decision making, the findings from the data collected from the interviews have shown that it is necessary to have effective monitoring and control of decisions by the local and community police and/or members of the community and the public as well as monitoring and control of the communication. In management theory, central to the concept of rational decision making is the ability to judge the consequences of the actions taken (Walton *et al.*, 2004). The monitoring and control, therefore, has the dual purpose of managing the communication between communities and members of the public with the police and ensuring the efficiency and effectiveness of decision making processes. This is especially important in case of police organisations adopting a decentralisation approach to decision making.

The literature highlights that monitoring and control involves learning from the decision making system in place, in order to be able to take the necessary corrective measures to improve the decision making processes (Lyons *et al.*, 2008; Ratcliffe, 2016). Therefore, monitoring and control of communication and decision making at police organisations requires early warning systems through embedding early signal detectors to detect changes in trends in both the communication and the decision making. Early signal detectors are critical for understanding

trends in societal as well as organisational changes (Kaivo-oja, 2012; Ratcliffe, 2016), and hence being able to judge the efficiency and effectiveness of decision making processes at police organisations and improving the decision making processes accordingly.

In early warning systems, the triggering of corrective measures is integral to the decision making process. In knowledge management theory, early warning systems contain mechanisms for corrective measures; positive, desired trends would be amplified and encouraged, while negative, undesired trends would be reduced and/or eliminated (Snowden & Boone, 2007). This is supported by findings from the proof of concept, which highlighted a need for an escalation procedure in case an issue arises from monitoring and control. Therefore, monitoring and control extends the traditional meaning of the term, to areas for example of intelligent policing, as will be discussed in Section 6.5.

Proposition 8: a practical framework for using Twitter as a communication instrument to support decision making should consider monitoring and control of communication and decision making.

6.4 Discussion for {CATEGORY 4}: {COMMUNICATION PRIVACY}

Analysis of interviews and focus groups has uncovered concepts related to the privacy of communication from communities and members of the public to using Twitter towards supporting decision making processes in the police in the UAE. The data has shown that communication for supporting decision making needs to address issues of maintaining privacy of participants on Twitter and ways to ensure the implementation of communication privacy on Twitter (and similarly with other social media channels).

6.4.1 *Maintaining and implementing communication privacy*

Findings from the data have shown that the public in the UAE have concerns about their privacy when communicating with the police on Twitter. The findings from the data have also shown that the public have concerns about the implementation of privacy on Twitter in practice. This has been related to devising effective privacy legislation, allowing for anonymity in communication, offering optionality to the public in terms of privacy and using suitable technology to ensure privacy. These findings are in line with the literature which highlights privacy concerns over social media (Auer, 2011; Bertot *et al.*, 2012). For example, Bertot *et al.* (2012) argue that the distinctive nature of social media forms critical policy challenges as these technologies continue to be used more widely by both government organisations and members of

the public. According to Bertot *et al.* (2012) much of the policies related to the privacy of users precedes the creation of social media, and hence their suitability to address privacy issues are questionable.

Participants have highlighted the importance for ensuring privacy of participating members of the public on Twitter (and similarly on other social media channels). In order for the police to be able to fight crime and maintain secure communities, they must develop relationships based on trust to secure cooperation with communities and members of the public. Privacy cannot be realised from either party alone, it requires the cooperation of the police and the community it protects (Tyler & Fagan, 2008).

An important element in this cooperation is for police to provide awareness and guidance on the use of social media by communities and members of the public. The maintenance of privacy in communication has been linked to how the public perceives privacy and to the threats to privacy, which can be dealt with using awareness. Without such awareness and guidance, police organisations seem to be implicitly endorsing the privacy policies adopted by social media providers by having presence on these social media channels (Bertot *et al.*, 2012).

In addition, interactive two-way communication is arguably a key factor in nurturing a trust relationship between the police and the communities and members of the public they serve, through promoting trust based on respecting privacy of individuals and communities (Duffy

et al., 2008; Copitch & Fox, 2010; Bradford, 2011; Crump, 2011). Historically, the police had been regarded as trusted body that provide accurate information to the public (Copitch & Fox, 2010). However, with the wide variety of information sources nowadays – some of which are deceiving as witnessed during the recent presidential elections in the USA – the police should not take the trust of communities and members of the public for granted. Trust comes with accountability and transparency (Cooke & Sturges, 2009). This is particularly critical as some researchers (e.g. Huey, 2010; Yilmaz, 2013) have identified an increasing gap between police work and public expectations.

Following from the above discussion, in order to develop and maintain a high degree of trust and hence legitimacy, police organisations should consider the privacy of participating communities and members of the public on the social media being used. This requires the review of policies related to privacy of users on the internet, in terms of their suitability to social media.

Proposition 9: a practical framework for using Twitter as a communication instrument to support decision making should consider methods for maintaining and implementing communication privacy.

6.5 Discussion for {CATEGORY 5}: {INTELLIGENT POLICING}

Analysis of interviews and focus groups has uncovered concepts related to intelligent policing using Twitter towards supporting decision making processes in the police in the UAE. The data has shown that intelligent policing needs to address issues of knowledge sharing, understanding of phenomena, understanding of communities and improvement.

6.5.1 *Knowledge sharing*

Findings from the evaluation of the proof of concept has shown a need for more knowledge (as opposed to information) sharing through interactions, towards intelligent policing. Findings from the interviews and focus groups have revealed that dependence on merely information sharing would not provide police with sufficient intelligence for effective decision making. Therefore, it is critical to diversify the channels of communication and methods of interaction with the public to obtain more in depth knowledge necessary for the decision making process.

The findings from the interviews and focus groups have also revealed that knowledge sharing is imperative for more in depth understanding of the phenomena discussed on the Twitter account and more in depth understanding of the communities, so as to have more intelligent policing and improved services.

The literature on intelligent policing distinguishes between information and knowledge-based models in decision making. An

information-based decision making model refers to a process that is dependent on conventional ways of collecting data, information and knowledge, whereas a knowledge-based decision making model refers to a process that is dependent on innovative ways of collecting intelligence (Ratcliffe, 2010, 2016). Although value to the decision making process can arguably accrue from collection of any type of intelligence, it is mainly knowledge that constitutes the fundamental component in intelligence-led policing (Ratcliffe, 2010, 2016). Accordingly, knowledge sharing with communities and members of the public plays a critical role in improving effectiveness of the decision making process at the UAE police (Klein & Methlie, 2009).

The current decision making process adopted by the UAE police is rather information-based. Even when knowledge is collected, it is often in the form of explicit knowledge through, for instance, interviews with members of the public. However, it is tacit knowledge that is more valuable (Nonaka & Von Krogh, 2009). Ratcliffe (2016) argues that the mere existence of clear channels of communication do not necessarily lead to effective decision making. Decision making should be more evidence-based, in the sense that it is based on knowledge and intelligence shared with the public. Thus, the current information-based model arguably does not realise the potential for intelligence-led policing.

Following from the discussion above, a practical framework for using Twitter as a communication instrument in supporting decision making processes should consider the development of a knowledge-based decision making approaches where knowledge is shared between the UAE police and communities and members of the public through two-way communication using social media. The reason for this is that the effectiveness of the decision making processes is directly related to intelligence gathered to make sound decisions. The aim is to evaluate the extent to which the decision making model would result in trustworthy processes that can lead to dependable decisions (Burstein & Holsapple, 2008b). This requires an understanding of what knowledge can be shared with members of local communities and the public in the UAE and how. It also requires an understanding of how this knowledge is used in conjunction with previous knowledge (e.g. lessons learned and best practices) (Ratcliffe, 2016). Finally, monitoring and control of decision making in comparison with the intelligence gathered is also vital.

Proposition 10: a practical framework for using Twitter as a communication instrument to support decision making should consider knowledge-based approaches to support decision making processes towards intelligent policing.

6.6 Illustration of the Framework

Following from discussion above, this section reports on the emergent theory in the form of a practical framework for using social media as a communication instrument in supporting decision making processes in police organisations.

As discussed in Chapter 1, a practical framework, in the context of this research is defined as both the essential logical components and the propositions that constitute the structure and practices for designing, developing and evaluating organisational models for using supporting decision making processes using social media. The findings from the evaluation of the proof of concept uncovered five main logical components that constitute the structure of the social media framework, namely communication strategy, communication engagement, governance, communication privacy and intelligent policing, as illustrated in Figure 6.2. The communication strategy represents the input to using social media in decision making. The communication engagement, governance and the communication privacy represent operational components. The intelligent policing represents the output of using social media in decision making.

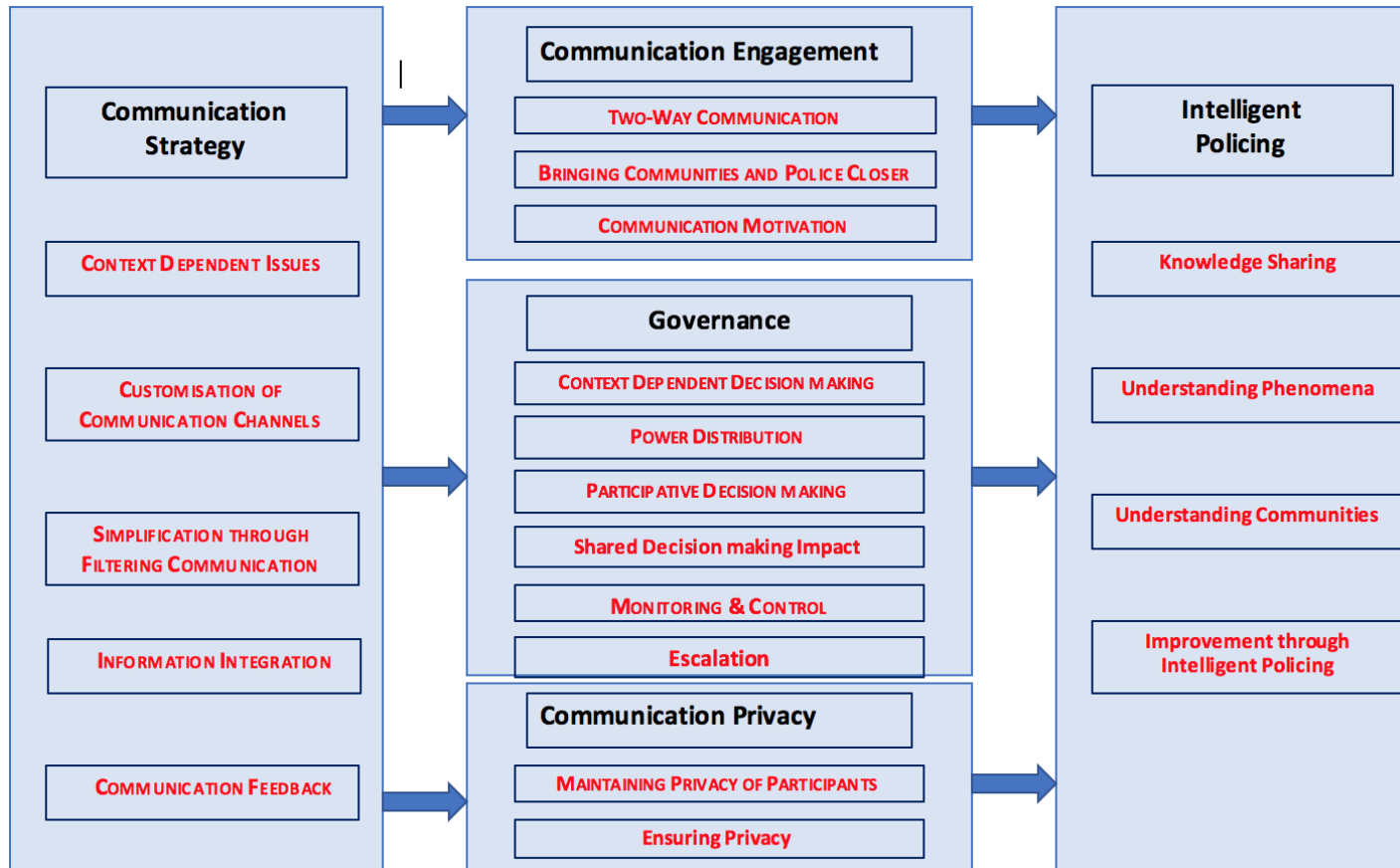


Figure 6.2: Detailed illustration of the framework for using social media in decision making

In addition, the emergent concepts led to the uncovering of ten propositions using selective coding. These propositions guide the design, development and evaluation of organisational models for using supporting decision making processes using social media.

As shown in Chapters IV and V, the emergent concepts and their properties and dimensions are interconnected, hence impact each other. Similarly, propositions are interconnected among themselves and with the concepts that led to them. Each proposition might cover more than one concept and each concept might contribute to more than one proposition. Therefore, it would not be accurate to map each of the concepts to a particular proposition. Therefore, although Table 6.1 summarises the uncovered propositions and map them to their closest concepts and to the investigation areas identified by the proof of concept, it is important to keep in mind interconnectivity of these propositions and their concepts. For example, the proof of concept investigation area of 'one-way vs two-way communication' is related to seven concepts under three themes: 'Communication Strategy' (communication feedback); 'Communication Engagement' (two-way communication; bringing communities and police closer; communication motivation) and 'Intelligent Policing' (knowledge sharing; understanding phenomena; understanding communities). In contrast the proof of concept investigation area of 'Centralised vs decentralised' is related to six concepts all under one theme: 'Governance' (context-dependent

decision making; power distribution; participative decision making; shared decision making impact; monitoring and control; escalation).

Despite the research was done in the UAE, the emergent framework and the propositions are relevant to other GCC countries and arguably to other countries. Around two thirds of the respondents are expatriates from different nationalities. This allows the results of the research to be relevant not only to GCC countries, but also to other countries globally. This will be discussed in more detail in Chapter VII.

Table 6.1: Mapping propositions and concepts to proof of concept areas of investigation

Proof of concept investigation area		Proposition	Description	Related themes & concepts
COMMUNICATION APPROACH	Mass vs customised communication	Simplification of interaction through filtering communication	enabling engagement of the public according to topics of interest and contexts of different communities	Communication strategy: <ul style="list-style-type: none"> • Context-dependent issues • Customisation of communication channels • Simplification through filtration • Information integration
		Customisation of communication	Communicating messages from police through channels based on neighbourhood or specific topics	
		Information integration	allowing accessibility to communication to be through a single-point	

Proof of concept investigation area		Related Proposition	Description	Related concepts
COMMUNICATION APPROACH	One-way vs two-way communication	Two-way communication	engaging with participants in an interactive conversation (a dialogue as opposed to a monologue) using social media	Communication Strategy: <ul style="list-style-type: none"> • Communication feedback Communication Engagement: <ul style="list-style-type: none"> • Two-way communication • Bringing communities and police closer <ul style="list-style-type: none"> • Communication motivation Intelligent Policing: <ul style="list-style-type: none"> • Knowledge sharing • Understanding phenomena • Understanding communities
		Interactive synchronous feedback	adopting a more responsive (synchronous) approach that allows the public to get instantaneous feedback on their participation	

Proof of concept investigation area		Related Proposition	Description	Related concepts
COMMUNICATION APPROACH	Information vs knowledge-based	communication motivation	encouraging the public to interact and share knowledge with the police on social media based on knowledge-exchange rather than information exchange	<p>Communication Engagement:</p> <ul style="list-style-type: none"> • Two-way communication • Bringing communities and police closer • Communication motivation <p>Intelligent Policing:</p> <ul style="list-style-type: none"> • Knowledge sharing • Understanding phenomena • Understanding communities

Proof of concept investigation area		Related Proposition	Description	Related concepts
COMMUNICATION GOVERNANCE	Strict privacy vs openness	methods for maintaining and implementing communication privacy	developing legislations for ensuring a balance between the privacy of users and the ability to freely share information, and creating awareness about it	Communication Privacy: <ul style="list-style-type: none"> • Maintaining privacy of participants • Ensuring privacy

Proof of concept investigation area		Related Proposition	Description	Related concepts
COMMUNICATION GOVERNANCE	Centralised vs decentralised	decentralisation of decision making and participation of communities and members of the public in the decision making process	creating a customer-focused model for decision making through distribution of power and participative decision making	Communication Governance: <ul style="list-style-type: none"> • Context-dependent decision making • Power distribution • Participative decision making • Shared decision making impact • Monitoring and control • Escalation

Proof of concept investigation area		Related Proposition	Description	Related concepts
COMMUNICATION GOVERNANCE	Traditional vs intelligent policing	monitoring and control of communication and decision making	creating early warning systems using weak signal and automatic corrective measures	Intelligent Policing: <ul style="list-style-type: none"> • Knowledge sharing • Understanding phenomena • Understanding communities • Improvement through intelligent policing
		knowledge-based approaches to support decision making processes towards intelligent policing	enabling and encouraging knowledge sharing between members of the public and the police	

6.7 Summary of Emergent Propositions

This chapter discussed the concepts and propositions that were uncovered from practice using the proof of concept. The discussion was presented under five categories that represent the structural pillars for designing a practical framework for using Twitter as a communication instrument to support decision making processes in police organisations, namely, Communication Strategy, Communication Engagement, Governance, Communication Privacy, and Intelligent Policing. The communication strategy represents the input to using social media in decision making. The communication engagement, governance and the communication privacy represent operational components. The intelligent policing represents the output of using social media in decision making.

Under each of these pillars, the emergent concepts, and their properties and dimensions, were evaluated against relevant research and practice in the literature. These concepts, and their properties and dimensions, revealed ten propositions. The propositions were mapped to the concepts and back to the areas of investigation identified in the proof of concept, as shown in Table 6.1. However, as discussed in this chapter, it is important to keep in mind the interconnectivity of these propositions and their concepts due to complex interconnections among the concepts, and between the concepts and the propositions.

Following from evaluation against relevant research and practice in the literature, this chapter presented the emergent theory in the form of a practical framework for using social media in decision making. The framework included both the structural pillars (i.e. the essential logical components) and the propositions, together constitute the structure and practices for designing, developing and evaluating organisational models for using supporting decision making processes using social media. The propositions are additionally useful in guiding the design, development and evaluation organisational models for using supporting decision making processes using social media.

Chapter VII – Conclusions and Future Work

This thesis presented an investigation on the use of Twitter as a communication instrument for supporting decision making in police organisations. This chapter concludes the thesis through providing a summary of the research, and discussing the contributions to both the body of knowledge and practice. Finally, the thesis discusses the way forward for future work in this area.

7.1 Research Summary

The research started by setting the scene of the research problem, and research question as stated in Chapter I. The thesis highlighted and discussed the complexity in the context, in which police organisations in general, and the UAE police in particular, are working. It was clearly identified that there is an increasingly widening gap between the police and the public and, despite efforts from police organisations to communicate more effectively by using different communication channels, with the public. The thesis also highlighted the limited amount of research on the effect of social media and its impact on interaction between the police, the communities and members of the public. This is especially the case in the context of the Middle East.

Based on observations through professional practice and on preliminary review of the literature, the thesis identified a problem in

research into effective ways to use social media as a communication instrument in supporting decision making in police organisations. Accordingly, the thesis defined the research question:

What practical framework that can be used for using social media as a communication instrument in support of decision making processes in police organisations?

The thesis set the research aim and identified the objectives of the research, based on which it highlighted the research strategy and research design, uncovering a framework from practice, rather than developing and testing hypotheses in order to maximise the contribution to both the body of knowledge and practice.

Following this, the thesis presented the critical review of the literature used to guide the design of the research and selection of the research methodology. The main purpose of the review of the literature was to identify key models, trends and practices to guide the development of a proof of concept for using social media as a communication instrument to support decision making in police organisations. Therefore, the literature review was conducted on three levels: the different communication instruments and its use in supporting decision making in public organisations and the police; analysis of the evolution of internet technologies from Web1.0 to Web2.0 and the impact of new technologies such as micro blogging on communication; and an investigation of social media as a

communication instrument and its use in supporting decision making. The review of the literature showed a paradigm shift in the Internet with the introduction of Web 2.0 technologies and social media platforms, mainly in a change in power from the organisation to Internet users. This shift has been manifested in more interactive two-way communication media and more participation from communities and members of the public, where Internet users are empowered to create, share and communicate information and knowledge. This paradigm shift has been offering government organisations both opportunities to transform the ways they communicate and interact with communities and members of the public, and challenges in defining the connections and methods used in their communications and interaction through this new media. The review of the literature also discussed the new trends in intelligent policing associated with innovations in information and communication technologies, especially in relation to the use of social media in collecting intelligence through knowledge sharing with communities and members of the public.

Drawing on findings from the literature review, the thesis presented an analysis of the communication model and practices using social media by the UAE police, while comparing it to models, trends and practices arising from the review of the literature. As a result, the research developed a proof of concept for using Twitter as a communication instrument to support decision making process, with a focus on the communication approach and governance. It was clear then

that Grounded theory was a suitable research methodology for evaluating the proof of concept, in light of the research philosophy and methodical choice underpinning the research. Grounded theory methodology was selected as it provides a mechanism to uncover theory – in the form of a framework – from practice, instead of testing hypothesis. Data collection and analysis cycles were then guided by the grounded theory methodology informing the research investigation from analytical sampling and data collection and analysis, to the verification and validation of data.

The analysis of the data collected to evaluate the proof of concept was presented in using colour coding to make it easier for the reader. A description of the interviews and focus groups were presented and the approach used to present the analysis of the data and findings was explained. The findings from data analysis uncovered five main areas that need to be considered when developing a framework for using Twitter as a communications instrument to support the decision making process in police organisations in the UAE, namely the communication strategy, communication engagement, governance, communication privacy and intelligent policing, as will be discussed in the next section.

Finally, the thesis discussed the findings from the analysis of the data collected in the evaluation of the proof of concept with related literature. The discussion resulted in articulating a framework in the

form of ten propositions that need to be considered when planning the use of Twitter – and social media in general – as a communication instrument to support decision making processes at police organisations.

7.2 Summary of the emergent framework

The findings from data analysis have uncovered five main areas that need to be considered when developing a framework for using Twitter as a communications instrument to support the decision making process in police organisations, namely the communication strategy, communication engagement, governance, communication privacy and intelligent policing. Although these five areas were uncovered from evaluating a proof of concept in the UAE, they are arguably applicable to all GCC countries due to similarities in culture and context.

A communication strategy should be underpinning the framework for using Twitter as a communications instrument to support the decision making process. The communication strategy needs to consider context dependency of the communication. For example, how specific communication will be channelled to certain neighbourhoods and/or topics of interest. While the communication strategy needs to maintain a single point of access for the public, it needs to devise mechanisms for filtering communication and customising it accordingly to simplify interactions between the public and the police and facilitate the work of the police. This can be achieved in Twitter using the hashtag

“technology”, while in other social media channels it can be achieved through the tagging technology. In addition, the communication strategy needs to develop ways to provide immediate feedback to the public for assurance.

The framework for using Twitter as a communications instrument to support the decision making process should develop the necessary plans, policies, and practices to engage the public in communication with the police. Two-way communication (as opposed to one-way broadcasting) is vital for engaging the public in communication with the police because it allows for real interactive communication and therefore makes the public feel that their voices are heard. In engaging the public in interactive communication, it is also important to motivate the public and bring communities and the police closer through allowing more participation of the public in the decision making process and reaching collective solutions.

Governance is the third main area of consideration when developing a framework for using Twitter as a communications instrument to support the decision making process. Communication governance needs to address issues of context dependency of the decision making process (e.g. neighbourhood or topic specific, criticality of the issue) and hence decentralisation of decision making to empower local police stations and members of communities to deal with issues that can be dealt with locally and escalate more critical issues (e.g.

national security related issues) to the central police station in each Emirate or to the police headquarters of the UAE. In addition, communication governance involves setting mechanisms, policies and practices for monitoring and control of decisions by the local police and members of the community as well as monitoring and control of the communication, from which the impact of decisions is studied, recorded and used as lessons learned to inform best practices in the future.

The framework for using Twitter as a communications instrument to support the decision making process should develop the necessary strategies and plans to maintain privacy of participants on Twitter through increasing awareness of the communities and the public on threats to privacy on Twitter and in social media in general. In addition, the framework should develop the necessary mechanisms, policies and practices to ensure effective implementation of privacy through developing effective privacy legislation, allowing for anonymity in communication, offering optionality to the public in terms of privacy and using suitable technology to ensure privacy.

Finally, intelligent policing is important to maximise the value from the framework for using Twitter as a communications instrument to support the decision making process. In order to achieve intelligent policing, it is vital to engage the public and communities in knowledge sharing through expanding the communication beyond Twitter. Information provided on Twitter, and other social media, could be used

to trigger further communication based on collecting more in depth knowledge in order to better understand the communities and the issues they are facing. Intelligent policing would improve the decision making process by understanding trends in phenomena and collecting lessons learned to devise best practices in the future.

Following from the above discussion, this research stresses the importance for implementing a framework that not only can monitor communication, but equally importantly to create and nurture environments that are customised/personalised towards the needs of communities and individuals, that enable two and multi-way communications and to be respecting the privacy of the public. These requirements are key in order to be able to better understand, respond and influence public opinion. Social media is a vital platform for realising these requirements through engaging the public in a dialogue and not only conveying messages to the public (Cooke & Sturges, 2009; Deneff *et al.*, 2011; Van den Born *et al.*, 2013). It is important to distinguish between “what is in the public interest” and “in what the public is interested” in information communication between the police and the public (Cooke & Sturges, 2009 p. 418). The effectiveness of the decision making processes is directly related to intelligence gathered to make decisions.

7.3 Resemblance between UAE and GCC

The framework for using Twitter as a communications instrument to support the decision making process is relevant to, and applicable in, other GCC countries. Although the framework has been uncovered from research in the UAE, it provides insights to other GCC countries due to the resemblance in the history, cultures, and contexts of the UAE and other GCC countries.

GCC countries including the UAE share similar geo-political and socio-economic characteristics (Hvidt, 2013; Al-Malkawi *et al.*, 2014) and hence face similar challenges and opportunities. For example, GCC countries including the UAE also have common demographics, where expatriates constitute a relatively high proportion of the population (around 70 percent of the work force across all GCC countries) (Mashood *et al.*, 2009; Hvidt, 2013). The majority of those expatriates live in communities where they would be able to keep as much as they can from their customs and rituals, and therefore these communities have different perspectives and attitudes towards the issues they face. Therefore, in GCC countries – like in the UAE – the emergent framework and its propositions would be relevant and applicable.

The simplification of interaction through the filtration and customisation of communication, for example, would arguably facilitate and improve interaction between citizens and the police in GCC countries as in the UAE. Both the citizens as well as the police in GCC

countries – like in the UAE – would benefit from more interactive, two-way communication and synchronous feedback. Enabling more engagement of, and motivation to, the communities and members of the public, would benefit the police in GCC countries – like in the UAE - from more knowledge-based (rather than merely information-based) communication. Both the police and the communities and members of the public in GCC countries – like in the UAE – would benefit from the distribution of the decision making powers, especially in dealing with minor issues. Maintenance and implementation of privacy in communication would be of interest to citizens in GCC countries as well as to citizens in the UAE, especially with the similarities in cultures, beliefs and behaviours not only among the locals but also among the expatriates who have much resemblance in the GCC countries.

Accordingly, the emergent framework for using Twitter as a communications instrument to support the decision making process is relevant to, and applicable in, other GCC countries and potentially other countries globally. The potential impact of the framework on citizens and the police in different countries is discussed in more detail in the next section.

7.4 Impact of the emergent framework

The emergent framework has potential impact on both citizens and police organisations, and the relationship between them. They both

can benefit from the options offered by the propositions in the framework for using social media in supporting the decision making process in police organisations.

First, citizens the simplification of interaction between the police and the public brings potential value to citizens, and consequently the police. Simplification of interaction through the filtration and customisation of communication would arguably facilitate and improve interaction between citizens and the police. This is particularly useful in countries and cities with high percentages of expatriates such as the UAE, where more than 70% of the population are expatriates coming from a wide range of countries, cultures and backgrounds, and hence different perspectives on different issues. As discussed in Chapter VI, the analysis of the data has shown that different neighbourhoods have different perspectives and attitudes towards different issues they face in their neighbourhoods. Therefore, it is useful not only to enable communities and members of the public to communicate using the medium that is convenient to them, but also enable them to engage in the areas or topics that are of interest to them through customising communication to the different interests and preferences of communities and members of the public. As a result of considering the customisation of communication, therefore, the citizens would have better accessibility to information, while the police would have better engagement from the different communities and members of the public they serve.

Second, both the citizens as well as the police would benefit from more interactive, two-way communication and synchronous feedback. By enabling more interactive, two-way communication with communities and members of the public, the police will be enabled to engage the public more in supporting them not only with information when needed, but also with better understanding of the different communities, their cultures and needs. Findings have shown that the public is increasingly expecting to be able to engage with the police in two-way communication, as opposed to being merely recipients of broadcast, one-way information. Moreover, by providing the communities and members of the public with speedy response through more synchronous feedback, the police can increase the trust of these communities in their work. As discussed in Chapter VI, findings have shown that feedback is important in encouraging and maintaining communication between the communities and members of the public and the police. According to analysis of interviewees and focus groups, whereas feedback on issues raised by communities and members of the public could be done using different media, feedback is preferred to be immediate. As a result of enabling more interactive, two-way communication, therefore, both police organisations and the public have potential value. The public benefits from two-way communication through accessing information of interest and engaging with the police as well as other members of the public in discussing topics of interest,

while the police have accesses to intelligence necessary for decision making and tools for managing communication.

Third, enabling more engagement of, and motivation to, the communities and members of the public they serve, the police would benefit from more knowledge-based (rather than merely information-based) communication. As discussed in Chapter VI, the engagement and motivation of communities and members of the public would potentially bring communities and the police closer and create stronger relationships between them, and hence achieve better results in fighting crime and improve institutional legitimacy. In addition, more knowledge-based intelligence (rather than just information-based) has the potential of being of more value to the police. Knowledge sharing is vital for more in depth understanding of the phenomena discussed on social media and more in depth understanding of the communities, which delivers more intelligent policing and improved services. In addition, more knowledge led policing has a critical role in improving effectiveness of the decision making process.

Fourth, distribution of the decision making powers has potential benefits to both the police and the communities and members of the public they serve. As discussed in Chapter VI, through the decentralisation of the decision making process, the decision making process would be distributed locally where it is closely related to the issues it address and hence would enhance the speed of response.

Communities and members of the public have the potential of being very effective in decision making of issues that relate to their neighbourhoods, and to which they understand the inherent contexts and history of their communities better. With the distribution of part of the decision making process, monitoring and control becomes vital for ensuring effectiveness and consistency of the decisions taken, and hence trust by the communities and members of the public.

Fifth, by maintaining and implementing communication privacy, the police addresses one of the critical concerns of communities and members of the public that determines levels of their engagement in communication and participation in the decision making process. Privacy maintenance and implementation, therefore, has potential impact on both the public and the police. Communities and members of the public would feel safer and more prepared to engage with the police in communication and decision making. The police will develop better relationships and has better cooperation with communities and members of the public based on trust.

7.4 Research Contribution

This thesis identified a gap in research for a practical framework that informs the use of social media as a communication instrument in supporting decision making. Whereas research in the area of social media as a communication instrument has been gaining importance in

the literature in recent years, there has been a paucity of research that addresses the use of social media as a communication instrument in supporting decision making in governmental organisations, particularly in police organisations. In addition, research on the use of social media to engage with the public in communication and interaction has been lacking a more in depth investigation of the impact of differences in culture and contexts on the use of social media in certain nations or regions. Although social media is a global phenomenon, the applications of social media in certain nations and regions are dependent on cultures and contexts.

Furthermore, although Police organisations have been increasingly using information and communication technologies and social media to communicate and interact more effectively with communities and members of the public and to support their decision making processes, observations in practice have shown that a gap has been increasingly widening between the police and the public in this respect. Observations of present practices at UAE police have revealed issues with their use of social media to communicate with communities and the public in UAE and with how these practices are used to support their decision making processes. The UAE police have been using social media mainly as mass media for one-way communication to broadcast the same message to all, whilst a lack of real interactivity with communities and members of the public and a lack of customisation of messages persisted. Moreover, the UAE police have been adopting a

centralised approach for gathering information using various sources, including social media, analysing this information at the central headquarters and sending decisions to local police units to be implemented, while a lack of participation of local police units and even of communities and members of the public persisted. These observations have led to questioning the effectiveness of using social media as a communication instrument by organisations in supporting their decision making processes, especially as social media are gradually becoming platforms of choice for communication between organisations and the public.

Accordingly, the discovery of a practical framework that informs the use of social media as a communication instrument in supporting decision making brings value to both the body of knowledge and to practice. To the body of knowledge, the framework reduces the gap in the literature for a practical framework that informs the use of social media as a communication instrument in supporting decision making and at the same time considers the context of police organisations, not only in the UAE and other GCC countries, but also in other police organisations in the world. Contribution to the body of knowledge continues with future work in the area, as will be discussed in the next section.

In addition, the framework provides practical insights to police organisations into optimising the potential from using social media in

communication, interactions and sharing knowledge with communities and members of the public. In fact, some of these contributions have been recently observed in changes to the way the UAE police views social media. As a case in point, Abu Dhabi police has only recently started implementing their own local Twitter channel to communicate and interact with the communities and members of the public in their emirate.

7.5 Future Work

Reflecting back on the thesis, although the emergent propositions and concepts are applicable to police organisations in the UAE and other GCC countries, it is important that future research considers the application of the framework in more nations with different cultures and contexts. This was discussed in Chapter I as one of the limitations of this research.

In order to reduce further the gap in the literature, this research aims to continue by evaluating the proof of concept in different countries and collecting data on the experiences of communities and members of the public in different cultures and contexts. This could be achieved by collaborating with other fellow researchers and professionals in different countries.

In addition, the research plans to expand on the use of Twitter to the use of a mix of social media to develop the framework further. This

was another limitation discussed in the introduction chapter. For each of the countries where the research would be implemented in the future, a mix of the top social media that are used by communities and members of the public in these countries will be used to develop a refined version of the proof of concept at each iteration.

Furthermore, future work is to implement the framework in practice through helping the UAE police leadership to devise strategies that maximise the value from using social media as communication instruments to support decision making. This in addition will enable the research to evaluate the emergent propositions from this research in practice.

References

Abbasi, M.A. and Liu, H. (2013). Measuring user credibility in social media. In International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (pp. 441-448). Springer Berlin Heidelberg.

Agarwal, M.K., Bansal, D., Garg, M. and Ramamritham, K. (2016). Keyword Search on microblog Data Streams: Finding Contextual Messages in Real Time.

Al-Dosari, S. (2016). Social media usage in the Middle East. *Arab News*, 1 March 2016

Al-Jenaibi, B., 2011. The use of social media in the United Arab Emirates—an initial study. *European Journal of Social Sciences*, 23(1), pp.84-97.

Al-Malkawi, H.A.N., Pillai, R. and Bhatti, M.I. (2014). Corporate governance practices in emerging markets: The case of GCC countries. *Economic Modelling*, 38, pp.133-141.

Al-Tarawneh, H. A. (2012). The Main Factors beyond Decision-making. *Journal of Management Research*, 4(1).

Alexander, D.E. (2014). Social media in disaster risk reduction and crisis management. *Science and Engineering Ethics*, 20(3), pp.717-733.

Antunes, F., and Costa, J. P. (2012). Integrating decision support and social networks. *Advances in Human-Computer Interaction, 2012*, 9.

Armin, J., Thompson, B., Ariu, D., Giacinto, G., Roli, F. and Kijewski, P. (2015). 2020 cybercrime economic costs: No measure no solution. In availability, reliability and security (ares), 2015 10th international conference on (pp. 701-710). IEEE.

Ashurst, C., Freer, A., Ekdahl, J. and Gibbons, C. (2012). Exploring IT-enabled innovation: A new paradigm?" *International Journal of Information Management*, 32 (4): 326-336.

Attouni, M. and Mustafa, C. (2014). How do Non-profit Organizations in Libya Adopt and Use Social Media to Communicate with The Society, *Procedia - Social and Behavioral Sciences*, 155: 92-97

Auer, M. R. (2011). The policy sciences of social media. *Policy Studies Journal*,39(4), 709-736.

Baker, D., & Hyde, M. (2011). Police have customers too. *Police Practice and Research: An International Journal*, 12(2): 148 - 162.

Berger, J. and Morgan, J. (2015). *The ISIS Twitter Census, Brookings Project on U.S. Relations with the Islamic World Analysis*. Available online at:

http://www.brookings.edu/~media/research/files/papers/2015/03/isis-twitter-censusberger-morgan/isis_twitter_census_berger_morgan.pdf. –

[Last accessed on 7 April, 2016]

Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010 a). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government information quarterly*, 27(3), 264-271.

Bertot, J. C., Jaeger, P. T., Munson, S., & Glaisyer, T. (2010 b). Engaging the public in open government: The policy and government application of social media technology for government transparency. *IEEE Computer*, 43(11), 53–59.

Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*, 29(1), 30-40.

Bohlke, O. (2013). A comparison of student participation levels by group size and € language stages during chatroom and face-to-face discussions in German. *CALICO Journal*, 21(1): 67-97

Bond, S, and Thompson-Fawcett, M, (2007). Public participation and New Urbanism: a conflicting agenda? *Planning Theory and Practice* 8 (4):449-472

Brabham, D. C. (2008). Crowdsourcing as a model for problem solving an introduction and cases. *Convergence: the international journal of research into new media technologies*, 14(1), 75-90.

Brainard, L.A., and J.G. McNutt. (2010). "Virtual Government and Citizen Relations." *Administration and Society* 42 (7): 836–858.

Britt, D. (2013). Community Key to Success of Community Policing Programs. *South Source*, 29.

Brown, V.R. and Vaughn, E.D. (2011). The writing on the (Facebook) wall: The use of social networking sites in hiring decisions. *Journal of Business and psychology*, 26(2), pp.219-225.

Buckley, J. (2014). *Managing Intelligence: A Guide for Law Enforcement Professionals*. Boca Raton, FL: Taylor and Francis

Bullas, J. (2010) *12 Key Findings on Social Media's Impact on Business and Decision Making by CEOs and Managers*. Available online at: <http://www.jeffbullas.com/2010/04/05/12-key-findings-on-social-media%E2%80%99s-impact-on-business-and-decision-making-by-ceos-and-managers> – [Last accessed on 31 May 2016]

Burstein, F., Cowie, J., Zaslavsky, A., & San Pedro, J. (2008). Support for real-time decision making in mobile financial applications. *Information Systems and E-Business Management*, 6(3): 257 - 278.

Burstein, F. & Holsapple, C. (2008a). *Handbook on decision support systems*. Springer, Berlin

Burstein, F. & Holsapple, C. (2008b). Decision support systems in context. *Information Systems and E-Business Management*, 6(3): 221 – 223.

Calcara G., Forss M., Tolvanen M.J. & Sund P. (2015) The Finnish Internet Police (Nettipoliisi): towards the development of a real cyber police. *European Journal of Law and Technology*, 6 (2)

Carlsson, S. A., & El Sawy, O. A. (2008). Decision Support in Turbulent and High-Velocity Environments. In *Handbook on Decision Support Systems 2* (pp. 3-17). Springer Berlin Heidelberg.

Cass, J. (2014). *More police visibility through 'game-changing' technology*. Available online at: <http://www.staffordshire-pcc.gov.uk/2014/07/police-visibility-game-changing-technology/> – [Last accessed on 2 June 2016]

Castillo, C., Mendoza, M. and Poblete, B. (2013). Predicting information credibility in time-sensitive social media. *Internet Research*, 23(5), pp.560-588.

Castillo, C., Mendoza, M. & Poblete, B. (2011). Information credibility on Twitter. *Proceedings of the 17th ACM Conference on Computer and Communications Security*, Hyderabad, India.

Chang, A. M., & Kannan, P. K. (2008). *Leveraging Web 2.0 in government*. Washington, DC: IBM Center for the Business of Government.

Chatter (2016) *Overview*. Available online at: <http://www.salesforce.com/uk/chat/overview/> – [Last accessed on 28 July 2016]

Chavin, J., Ginwala, A. and Spear, M. (2012). The future of mobile messaging: Over-the-top competitors threaten SMS as a result of the increased penetration of smartphones and OS application: 1–7

Chung, N., Lee, S. & Han, H. (2015). Understanding communication types on travel information sharing in social media: A transactive memory systems perspective. *Telematics and Informatics*, 32 (4): 564–575.

Chu, C.C., Lu, E.Y., Wang, C.Y. and Tsai, T.J. (2016). Grounding Police Accountability and Performance in Context: A Comparative Study of Stop and Frisk Between New York City and Taipei City. *Public Administration and Development*, 36(2), pp.108-120.

Chun, S. A., Shulman, S., Sandoval, R., & Hovy, E. (2010). Government 2.0: Making connections between citizens, data and government. *Information Polity*, 15(1), 1.

Clark, D. (2013). *Leveraging Social Media Technology for Better Decision Making*. Available online at: <http://www.middlemarketcenter.org/expert-perspectives/leveraging-social-media-technology-for-better-decision-making> – [Last accessed on 25 April 2016]

Cleveland, S. (2016). Social Media Systems in the Workplace: Toward Understanding Employee Knowledge Creation via Microblogging within Shared Knowledge Domains. In *Informatics* (Vol. 3, No. 3, p. 11). Multidisciplinary Digital Publishing Institute.

Clouds Media (2016). Latest Social Media Statistics in the UAE for 2016. Available online at: <http://uae.cloudsonline.net/blog/latest-social-media-statistics-in-the-uae-for-2016> – Last accessed on 25 April 2016.

Coats, D. & Passmore, E. (2008). *Public Value: The Next Step in Public Service Reform*. London: The Work Foundation

Coleman, T. G. (2008). Managing strategic knowledge in policing: do police leaders have sufficient knowledge about organisational performance to make informed strategic decisions?. *Police Practice and Research: An International Journal*, 9(4): 307 - 322.

College of Policing (2013). *Intelligence management*. Available online at: <https://www.app.college.police.uk/app-content/intelligence-management/analysis/> – [Last accessed on 4 May 2016]

Commons Select Committee (2012). *Committee Publishes Report on Mobile Technology in Policing*. Available online at: <http://www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news/mobile-technology-in-policing/> – [Last accessed on 2 June 2016]

Conner, C. (2013). *Who wastes the most time at work?* Forbes, September 7, 2013

Cooke, L., & Sturges, P. (2009). Police and media relations in an era of freedom of information. *Policing & Society*, 19(4), 406-424.

Copitch, G., & Fox, C. (2010). Using social media as a means of improving public confidence. *Safer Communities*, 9(2), 42-48.

Correa, T. (2016). Digital skills and social media use: how Internet skills are related to different types of Facebook use among 'digital natives'. *Information, Communication & Society*, 19(8), pp.1095-1107.

Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five designs*.

Cromer, C. (2010). Understanding Web 2.0's influences on public e-services: A protection motivation perspective. *Innovation*, 12(2), 192-205.

Crump, J. (2011). What are police doing on Twitter? Social media, the police and the public. *Policy and Internet*, 3: 4

Darwish, A. and Lakhtaria, K. (2011), The Impact of the New Web 2.0 Technologies in Communication, Development, and Revolutions of Societies. *Journal Of Advances In Information Technology*, 2, (4): 204-216

Della Cava, M. R. (2010). Twitter power: learning from ourselves in real time. *USA Today*, 1A.

Denef, S., Bayerl, P.S. and Kaptein, N.A. (2013). Social media and the police: tweeting practices of british police forces during the August 2011 riots. In proceedings of the SIGCHI conference on human factors in computing systems (pp. 3471-3480). ACM.

Denef, S., Kaptein, N., & Bayerl, P. S. (2011). ICT trends in European policing. The COMPOSITE Project.

Dene, S., Kaptein, N., Bayer, P. and Ramirez, L. (2012). *Best Practice in Police Social Media Adaptation*. Sankt Augustin, Germany: Composite Project, EU

Dept of Health (2012). *The Power of Information*. Policy document 17668. London: Information Policy Team

Derrick-Mills, T. (2014). Electronic Commons, Community Policing, and Communication. *Administrative Theory and Praxis*, 33 (3)

Digitalgov (2016). *Social Media*. Available online at: <http://www.digitalgov.gov/category/socialmedia/> – [Last accessed on 1 June 2016)]

Dixon, T.L. and Williams, C.L. (2015). The changing misrepresentation of race and crime on network and cable news. *Journal of Communication*, 65(1), pp.24-39.

Dorris, M. (2008). Service transformation in government. *The Public Manager*, 25–28.

Drapeau, M., & Wells, I. I. (2009). Social software and national security: An initial net assessment. National Defense University Washington DC Center for Technology and Security Policy.

Duvic-Paoli, L. (2012). The Status of the Right to Public Participation in International Environmental Law: An Analysis of the Jurisprudence. *Yearbook of International Environmental Law*, 23 (1), 80-105

EDRM (2016). *United Arab Emirates*. Available online at: <http://www.edrm.net/resources/data-privacy-protection/data-protection-laws/united-arab-emirates> – [Last accessed on 28 July 2016]

Efron, M. (2004). Cultural orientation: Classifying subjective documents by cocitation analysis. In AAAI Fall Symposium on Style and Meaning in Language, Art, and Music.

Ehrlich, K. & Shami, N.S. (2010). *Microblogging Inside and Outside the Workplace*. Cambridge, MA: IBM Research Centre.

Emirates247 (2013). UAE, Qatar have highest expat ratio in GCC. Available online at: <http://www.emirates247.com/news/emirates/uae-qatar-have-highest-expat-ratio-in-gcc-2013-09-11-1.520659> – [Last accessed on 30 July 2016]

Falcione, R. & Wilson, C. 1995. Socialization Process in Organization. In Goldhaber, G. & Barnett, G. *Handbook of Organizational Communication*. Norwood. Ablex, 1995, 151–169.

Foster, C., Grimmett, C., May, C.M., Ewings, S., Myall, M., Hulme, C., Smith, P.W., Powers, C., Calman, L., Armes, J. and Breckons, M., 2016. A web-based intervention (RESTORE) to support self-management of cancer-related fatigue following primary cancer treatment: a multi-

centre proof of concept randomised controlled trial. *Supportive Care in Cancer*, 24(6), pp.2445-2453.

Fung, A. (2015). Putting the public back into governance: the challenges of citizen participation and its future. *Public Administration Review*, 75(4), pp.513-522.

Ganapati, S. and Reddick, C. (2012). Open e-government in U.S. state governments: Survey evidence from Chief Information Officers. *Government Information Quarterly*, 29 (1): 115–122

Gharis, L., Bardon, R., Evans, J., Hubbard, W. and Taylor, E. (2014). Expanding the reach of extension through social media. *Journal of Extension*, 52: 3.

Glaser, B.G. (1992). *Emergence vs forcing: Basics of grounded theory analysis*. Sociology Press.

Glaser, B.G. and Strauss, A.L. (1967). *Discovery of grounded theory*. Mill Valley.

Global Media Insight (2016). UAE Social Media Statistics 2016 Infographics. Available online at:

<http://www.globalmediainsight.com/blog/uae-social-media-statistics/> –

[Last accessed on 2 July, 2016]

Goldkuhl, G., (2012). Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems*, 21(2), pp.135-146.

Gross, D. (2011). Google, Twitter Help Give Voice to Egyptians. CNN Online [February 1, 2011]. Available online at: <http://edition.cnn.com/2011/TECH/web/02/01/google.egypt> – [Last accessed on 22 August, 2015]

Gulbranson, C.A. and Audretsch, D.B. (2008). Proof of concept centers: accelerating the commercialization of university innovation. *The Journal of technology transfer*, 33(3), pp.249-258.

Gurau, C. (2008). Integrated online marketing communication: implementation and management. *Journal of communication management*, 12(2), pp.169-184.

Habermas, J. 1998. *On the Pragmatics of Communication*. Cambridge. MIT Press.

Habernal, I., Ptáček, T., & Steinberger, J. (2014). Supervised sentiment analysis in Czech social media. *Information Processing & Management*, 50(5), 693-707.

Hall, K. (2013). Met Police to equip officers with 30,000 mobile devices. *Computer Weekly*, 17 January 2013

Hansen, D., Shneiderman, B., & Smith, M. A. (2010). *Analyzing social media networks with NodeXL: Insights from a connected world*. Morgan Kaufmann.

Herring, S., Stein, D., and Virtanen, T. (2013). *Pragmatics of computer-mediated communication*. Vol. 9. Berlin, Germany: Walter de Gruyter.

Herschel, R.T. and Jones, N.E. (2005). Knowledge management and business intelligence: the importance of integration. *Journal of knowledge management*, 9(4), pp.45-55.

HMIC (2008). *Inspection of resource leverage: Metropolitan Police Service*. Available online at: <https://www.justiceinspectorates.gov.uk/hmic/our-work/specialist-inspections/inspection-of-resource-leverage-metropolitan-police-service/> – [Last accessed on 28 July 2016]

Howard, P., Duffy, A. *et al.* (2011). *Opening Closed Regimes: What was the Role of Social Media During the Arab Spring?* Working Paper 2011.1. Seattle: University of Washington.

Hussain, M. and Kashif, M. (2015). Arab Uprising 2011: Emergence of Extremism in Middle East and Its Regional Consequences. *Alternatives: Turkish Journal of International Relations*, 14(2).

Hvidt, M., (2013). Economic diversification in GCC countries: Past record and future trends. The London School of Economics and Political Science.

Incite Group (2014). *How social media is now used in corporations*. Available online at: <http://www.incite-group.com/internal-organization/how-social-media-now-used-corporations> – [Last accessed on 1 June 2016]

International Association of Chiefs of Police (2014). *Using community policing to counter violent extremism: five key principles for law*

enforcement. Washington, DC: Office of Community Oriented Policing Services

James, O. (2014). Does performance information about public services affect citizens' perceptions, satisfaction, and voice behavior? Field experiments with absolute and relative performance information. *Public Administration*, 92(2), 493–511

Jaeger, P. T., & Bertot, J. C. (2010). Designing, implementing, and evaluating user-centered and citizen-centered e-government. *International Journal of Electronic Government Research*, 6(2), 1-17.

Jaeger, P. T., Bertot, J. C., & Shuler, J. A. (2010 a). The Federal Depository Library Program (FDLP), academic libraries, and access to government information. *The journal of academic librarianship*, 36(6), 469-478.

Jaeger, P. T., Paquette, S., & Simmons, S. N. (2010 b). Information policy in national political campaigns: A comparison of the 2008 campaigns for President of the United States and Prime Minister of Canada. *Journal of Information Technology & Politics*, 7(1), 67-82.

Janiesch, C., Matzner, M. and Müller, O., (2012). Beyond process monitoring: a proof-of-concept of event-driven business activity management. *Business Process Management Journal*, 18(4), pp.625-643.

Jaring, P., Bäck, A., Komssi, M. and Käki, J., 2015. Using Twitter in the acceleration of marketing new products and services. *Journal of Innovation Management*, 3(3), pp.35-56.

Jonathan-Zamir, T., Weisburd, D. and Hasisi, B. (2014). Policing Terrorism from the Perspective of the Arab Minority. In Policing Terrorism, Crime Control, and Police-Community Relations (pp. 117-137). Springer International Publishing.

Kaivo-oja, J. (2012). Weak signals analysis, knowledge management theory and systemic socio-cultural transitions. *Futures*, 44(3), pp.206-217.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, 53(1), 59-68.

Kappeler, V. & Gaines, L. (2015). *Community Policing: A Contemporary Perspective*. 7th ed. Abingdon: Routledge

Karn J. (2013). *Policing and Crime Reduction: the evidence and its implications for practice*. London: The Police Foundation

Kassim, S. (2012). *Twitter Revolution: How the Arab Spring Was Helped By Social Media*. Available online at: <http://mic.com/articles/10642/twitter-revolution-how-the-arab-spring-was-helped-by-social-media#.f52nKAEYf> – [Last accessed on 25 April 2016]

Kemp, S. (2015). *We are social*. [Online] Available at: <http://wearesocial.sg/blog/2015/03/digital-social-mobile-in-apac-in-2015/> [Last accessed: April 7, 2016].

Kes-Erkul, A., & Erkul, E. (2009). Web 2.0 in the process of e-participation: The case of organizing for America and the Obama administration. Available online at: <http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1031&context=ncdg> – [Last accessed on 31 August, 2015]

Ketchum (2012). The Principles of PR Measurement. Ketchum Global Research & Analytics. Available online at: <http://www.ketchum.com> – [Last accessed September 18, 2015]

Kiron, D., Palmer, D., Phillips, A. N., and Kruschwitz, N. (2012). Social Business: What Are Companies Really Doing?. *MIT Sloan Management Review*.

Klein, M., & Methlie, L. B. (2009). Knowledge-based decision support systems with applications in business: a decision support approach.

Kleinhans, R., Van Ham, M. and Evans-Cowley, J. (2015). Using social media and mobile technologies to foster engagement and self-organization in participatory urban planning and neighbourhood governance. *Planning Practice & Research*, 30(3), pp.237-247.

Kumar, S. & Havey, T. (2013). Before and after disaster strikes: A relief supply chain decision support framework. *International Journal of Production Economics* 145: 613 – 629.

Kuzma, J. (2010). Asian government usage of Web 2.0 social media. *European Journal of ePractice*, (9), 1-13.

Landsbergen, D. (2010, June). Government as part of the revolution: Using social media to achieve public goals. In Proceedings of the 10th European conference on e-government (pp. 243-250).

Lanza, J., Sanchez, L., Gomez, D., Elsaleh, T., Steinke, R. and Cirillo, F. (2016). A Proof-of-Concept for Semantically Interoperable Federation of IoT Experimentation Facilities. *Sensors*, 16(7), p.1006.

Lathrop, D., & Ruma, L. (2010). Open government: Collaboration, transparency, and participation in practice." O'Reilly Media, Inc."

Lessig, L. (2009). Code 2.0. Google Books.

Lichtenstein, J. (2010). Digital Diplomacy. *New York Times Magazine* (July 18, 2010): 26–29. Available online at: <http://digitizingamerica.shanti.virginia.edu/sites/shanti.virginia.edu.digitizingamerica/files/www-nytimes-com.pdf> – [Last accessed on 29 September, 2015]

Li, F. and Du, T. (2014) Listen to me — Evaluating the influence of micro-blogs. *Decision Support Systems*, 62: 119-130

Lin, H. (2014). Establishing an empirical link between computer-mediated communication (CMC) and SLA: a meta-analysis of the research. *Language Learning and Technology*, 18(3), 120-147.

Lipowicz, A. (2009). 4 reasons why e-records are still a mess. *Federal Computer Week* (6 March, 2009). Available online at:

<http://www.fcw.com/Articles/2009/03/09/policy-email-records.aspx> –

Last accessed on 3 September, 2015.

Lundgren, F. and McMakin, A. (2013). *Face-to-face communication. A handbook for communicating environmental, safety, and health risks* (4th ed) New Jersey: John Wiley and Sons, Inc.

Lyons, J.E., Runge, M.C., Laskowski, H.P. and Kendall, W.L. (2008). Monitoring in the context of structured decision-making and adaptive management. *The Journal of Wildlife Management*, 72(8), pp.1683-1692.

Macosenz, and Ladougl. (2010). *Social Media: Cultivate Collaboration and*

Innovation. Available online at:

http://www.cisco.com/web/CN/products/products_netsol/voices/pdf/uc_serv_05.pdf – [Last accessed on 2 May, 2016]

Malenko, N. (2014) Communication and Decision-Making in Corporate Boards. *Review of Financial Studies* (2014) 27 (5):1486-1532.

Marchand, T. (2013). Speech in written form? A corpus analysis of computer mediated communication. *Linguistic Research*, 30(2), 217-242.

Mashood, N., Verhoeven, H. and Chansarkar, B. (2009). Emiratisation, Omanisation and Saudisation—common causes: common solutions. In 10th International Business Research Conference, Dubai, UAE (pp. 1-12).

Mawby, R. (2010). Police corporate communications, crime reporting and the shaping of policing news. *Policing and Society*, 20 (1), 124-139

McAteer, M and Orr, K. (2006). 'Public Participation in Scottish Local Government: Strategic and Corporate Confusions', *Public Money and Management*, pp. 131-138

McClendon, S. and Robinson, A.C. (2013). Leveraging geospatially-oriented social media communications in disaster response. *International Journal of Information Systems for Crisis Response and Management (IJISCRAM)*, 5(1), pp.22-40.

McCrea, J. (2014). How NHS organisations should use social media. *The Guardian*, 18 December 2014

Meijer, A. J. (2008). E-mail in government: Not post-bureaucratic but late-bureaucratic organizations. *Government Information Quarterly*, 25: 429 – 447.

Meijer, A. and Torenvlied, R. (2014), Social Media and the New Organization of Government Communications: An Empirical Analysis of Twitter Usage by the Dutch Police, *American Review of Public Administration*, Vol. 46(2): 143–161

Mejova, Y., Schepper, K.D., Bergman, L. and Lu, J. (2011). Reuse in the wild: An empirical and ethnographic study of organisational content reuse. *Proceedings of the 2011 Annual Conference on Human Factors in Computing Systems*, New York

Mergel, I. (2013) *Social media in the public sector: A guide to participation, collaboration, and transparency in the networked world*. San Francisco: John Wiley and Sons,

Mergel, I. and Greeves, B. (2013) *Social media in the public sector field guide*. San Francisco: John Wiley and Sons.

Metropolitan Police (2016). *Twitter*. Available online at: https://twitter.com/metpoliceuk?ref_src=twsrc^google|twcamp^serp|twgr^author – Last accessed on 1 June 2016)

Miller, G. and Nakashima, E. (2015). Recent Islamic State arrests include suspects in alleged July 4 plots, *Washington Post*. Available at: https://www.washingtonpost.com/world/national-security/fbi-chief-describes-surge-in-arrests-related-to-islamicstate/2015/07/09/60d77998-2662-11e5-aae2-6c4f59b050aa_story.html - [Last accessed April 7, 2016]

Monzani, L., Ripoll, P., Peiro, J. M., and Van Dick, R. (2014). Loafing in the digital age: the role of computer mediated communication in the relation between perceived loafing and group affective outcomes. *Computers in Human Behavior*, 33: 279-285.

Mossberger, K., Wu, Y. & Crawford, J. (2013). Connecting citizens and local governments? Social media and interactivity in major U.S. cities, *Government Information Quarterly*, 30 (4): 351-358

Mykkanen, M. (2010). *Decision Making and Decision Communication in an Engineer Based Organisation*, Submission for EUPRERA Award, University of Jyväskylä

Naaman, M., Becker, H. & Gravano, L. (2011). Hip and Trendy: Characterising Emerging Trends on Twitter. *Journal of the American Society for Information Science and Technology*, 62 (5), 902-918

Nah, S. and Saxton, G. (2012). Modelling the adoption and use of social media by non-profit organizations *New Media and Society*, 15 (2): 294–313

Nakashima, E. (2015). Lawmakers want Internet sites to flag 'terrorist activity' to law enforcement. *Washington Post*. Available at: https://www.washingtonpost.com/world/national-security/lawmakers-want-Internet-sites-to-flag-terrorist-activity-to-lawenforcement/2015/07/04/534a0bca-20e9-11e5-84d5-eb37ee8eaa61_story.html

Ndasauka, Y., Hou, J., Wang, Y., Yang, L., Yang, Z., Ye, Z., Hao, Y., Fallgatter, A.J., Kong, Y. and Zhang, X. (2016). Excessive use of Twitter among college students in the UK: Validation of the Microblog Excessive Use Scale and relationship to social interaction and loneliness. *Computers in Human Behavior*, 55, pp.963-971.

Nikoi, E. & Boateng, K. (2014). *Collaborative Communication Processes and Decision Making in Organisations*. Hershey, PA: IGI Global

Nonaka, I., & Von Krogh, G. (2009). Perspective-tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory. *Organization science*, 20(3), 635-652.

Oberkampff, W.L. and Trucano, T.G. (2002). Verification and validation in computational fluid dynamics. *Progress in Aerospace Sciences*, 38(3), pp.209-272.

O'Donnell, C. (2011). New Study Quantifies Use of Social Media in Arab Spring. *UW Today*, September 12, 2011

O'reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & strategies*, (1), 17.

Pak, A., & Paroubek, P. (2010). Twitter as a Corpus for Sentiment Analysis and Opinion Mining. In LREC.

Peaslee, L. (2009). Community policing and social service partnerships: Lessons from New England. *Police Practice and Research: An International Journal*, 10(2): 115 - 131.

Perez, D. (2010). *Paradoxes of Police Work*. New York: Cengage Learning.

Peltier, J.W., Schibrowsky, J.A. and Schultz, D.E. (2003). Interactive integrated marketing communication: combining the power of IMC, the new media and database marketing. *International Journal of Advertising*, 22(1), pp.93-115.

Picazo-Vela, S., Gutierrez-Martinez, I., & Luna-Reyes, L. F. (2012). Understanding risks, benefits, and strategic alternatives of social media

applications in the public sector. *Government Information Quarterly*, 29(4), 504-511.

Police Executive Research Forum (2014). *Future Trends in Policing*. Washington, DC: Office of Community Oriented Policing Services

Police Federation (2016). *Effective communication is key for moving policing forward*. Available online at: <http://www.polfed.org/newsroom/3377.aspx> – [Last accessed on 2 June 2016]

Porter, J. (2010). *Designing for the social web*. Peachpit Press.

Preston, J. (2011). Ethical Quandary for Social Sites. NY Times Online [March 27, 2011]. Available online at: http://www.nytimes.com/2011/03/28/business/media/28social.html?_r=0 – [Last accessed on 22 August, 2015]

Ratcliffe, J. H. (2016). *Intelligence-led policing*. Routledge.

Ratcliffe, J. H. (2010). *Intelligence-led policing: Anticipating risk and influencing action*. The International Association of Law Enforcement Intelligence Analysts (IALEIA).

Roache, P.J. (1998). *Verification and validation in computational science and engineering*. Hermosa.

Robson, C. (2011). *Real World Research: A resource for Users of Social Research Methods in applied settings 3rd Edition*.

Rotherham Advertiser (2015). Technology means more time in community for police. 27 January 2015.

Ruck, K. and Welch, M. (2012). Valuing internal communication; management and employee perspectives. *Public Relations Review*, 38(2), pp.294-302.

Ruth-McSwain, A. (2011). Gatekeeper or peacekeeper: The decision-making authority of public relations practitioners. *Public Relations Journal*, 5: 1-14.

Saarinen, J. (2015). *Virtual community policing in Finland*. Available online at: http://www.polizei.mvnet.de/cms2/Polizei_prod/Polizei/de/oeff/Danziger_Gespraecher/Thementeaser/2015/Referate/DG_2015_Saarinen.pdf

– [Last accessed on 2 June 2015]

Salaberry, M. R. (2013). A theoretical foundation for the development of pedagogical tasks in computer mediated communication. *Calico Journal*, 14(1), 5-34

Sanders, Karen. 2011. "Political Public Relations and Government Communication." In *Political Public Relations. Principles and Applications*, ed. Jesper Strömbäck and Spiro Kiousis, 254-273. New York: Routledge.

Sanders, K. and Canel, M. (2015) Mind the gap: Local government communication strategies and Spanish citizens' perceptions of their cities. *Public Relations Review*. 41 (2015) 777–784

Saunders, M. N., Saunders, M., Lewis, P., & Thornhill, A. (2011). *Research Methods For Business Students*, 5/e. Pearson Education India

Saunders, M. & Tosey, P. (2013). *The Layers of Research Design*. Available online at: http://www.academia.edu/4107831/The_Layers_of_Research_Design – [Last accessed on 25 November, 2014]

Sayre, B., L. Bode, D. Shah, D. Wilcox, and C. Shah. (2010). *Agenda Setting in a*

Digital Age: Tracking Attention to California Proposition 8 in Social Media, Online News, and Conventional News. Policy and Internet 2 (2).

Schaefer, M. (2016) *Five Mega-trends: How Social Media is Transforming Government*. Available online at: <http://www.businessesgrow.com/2011/04/04/five-mega-trends-how-social-media-is-transforming-government/> – [Last accessed on 1 June 2016]

Schillemans, T. (2012). *Mediatization of public services: How organizations adapt to news media*. Frankfurt, Germany: Peter Lang.

Scott, K. (2015). The pragmatics of hashtags: Inference and conversational style on Twitter. *Journal of Pragmatics*, 81, pp.8-20.

Seidl, D. & Becker, K. (2006). Organizations as Distinction Generating and Processing Systems: Niklas Luhmann's Contribution to Organization Studies. *Organization*, Vol. 13, No. 1, 9–35.

Sema, P. (2013). *Does social media affect consumer decision-making?*. Unpublished MBA Student Scholarship paper 24, Johnson and Wales University

Shane, S. (2011). Spotlight Again Falls on Web Tools and Change. NY Times Online [January 29, 2011]. Available online at: <http://www.nytimes.com/2011/01/30/weekinreview/30shane.html> — [Last accessed on 22 August, 2015]

Shen, C.W. and Chu, S.H. (2014). Web 2.0 and Social Networking Services in Municipal Emergency Management: A Study of US Cities. J. UCS, 20(15), pp.1995-2004.

Siamagka, N., Christodoulides, G., Michaelidou, N. & Valvi, A. (2015). Determinants of social media adoption by B2B organizations, *Industrial Marketing Management*, 51, 89-99.

Siegel, L. (2015) *Criminology: Theories, Patterns and Typologies*. Boston: Cengage Learning

Skype (2016). *Skype keeps the world talking, for free*. Available online at: <https://www.skype.com/en/> – Last accessed on 28 July 2016.

Snowden, D.J. and Boone, M.E. (2007). A leader's framework for decision making. *harvard business review*, 85(11), p.68.

Snyder, C. (2009). Government agencies make friends with new media. *Wired*. Available online at:

<http://blog.wired.com/business/2009/03/government-agen.html> – [Last accessed on 2 September, 2015]

Statista (2015). Penetration of leading social networks in the United Arab Emirates as of 4th quarter 2015. Available online at: <http://www.statista.com/statistics/284504/united-arab-emirates-social-network-penetration/> – [Last accessed on 28 July 2016]

Strauss, A. and Corbin, J. (1998). Basics of qualitative research: Techniques and procedures for developing grounded theory. Sage Publications, Inc.

Strauss, A. and Corbin, J. (1990). Basics of qualitative research (Vol. 15). Newbury Park, CA: Sage.

Stryker, J. B., and Santoro, M. D. (2012). Facilitating face-to-face communication in high-tech teams. *Research-Technology Management*, 55(1): 51-56.

Sujit, K.S. (2011). Comparing Ethical Attitudes of Expatriates working in UAE. *Middle East Journal of Business*, 6(1), pp.10-23.

SYPC (2015). *Mobile Devices and 150,000 Hours of Police Visibility in South Yorkshire*. Available online at: <http://www.southyorkshire-pcc.gov.uk/News-and-Events/News/2015/January/Mobiledevicesadd150,000hoursofpolicevisibilitytoSouthYorkshire.aspx><http://www.southyorkshire-pcc.gov.uk/News-and-Events/News/2015/January/Mobiledevicesadd150,000hoursofpolicevisibilitytoSouthYorkshire.aspx>

[Events/News/2015/January/Mobiledevicesadd150,000hoursofpolicevisibilitytoSouthYorkshire.aspx](#) – [Last accessed on 2 June 2016]

Tang, L., & Liu, H. (2010). Community detection and mining in social media. *Synthesis Lectures on Data Mining and Knowledge Discovery*, 2(1), 1-137.

Taralunga, N. (2010) *Introduction Of Comprehensive Participation Of Citizens As Well As Governmental And Non-governmental Organizations In The Urban Planning Process*. NALAS: Munich

The Guardian (2015). Facebook hits one billion user milestone. Available online at: <http://www.theguardian.com/world/video/2015/aug/28/facebook-hits-one-billion-user-milestone-video> – [Last accessed on 31 August, 2015]

Toch, H. (2008). Police officers as change agents in police reform. *Policing & Society*, 18(1): 60 - 71.

Treem, J., and Leonardi, P. (2012). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Communication yearbook*, 36, 143-189.

Turban, E., Liang, T. P., & Wu, S. P. (2011). A framework for adopting collaboration 2.0 tools for virtual group decision making. *Group decision and negotiation*, 20(2), 137-154.

Twitter (2016). *See what's happening right now*. Available online at: <https://twitter.com/> – [Last accessed on 31 May 2016]

Twitter (2015). Twitter Usage – Company Facts. Available online at: <https://about.twitter.com/company> – [Last accessed on 31 August, 2015]

Twitter, (2013). *Types of Tweets and where they appear*. Available online at: <https://support.twitter.com/articles/119138> [Last accessed on 7 April 2016]

Tyler, T. R., & Fagan, J. (2008). Legitimacy and cooperation: Why do people help the police fight crime in their communities. *Ohio St. J. Crim. L.*, 6, 231.

Ullman, D. (2011). Accord software tool suite™ decision management software. Available online at: <http://www.robustdecisions.com/decision-making-software/> Last accessed on 27 April 2016.

UNDP (2015), Human Development Report 2015, Work for human development, Briefing note for countries on the 2015 Human Development Report, United Arab Emirates. Available online at: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/ARE.pdf - [Last accessed on 29 May, 2016]

Van den Born, A., Van Witteloostuijn, A., Barlage, M., Sapulete, S., van den Oord, A., Vallet, N., ... & Polos, L. (2013). Policing opportunities and threats in Europe. *Journal of Organizational Change Management*, 26(5), 4-4.

Van de Walle, B., & Turoff, M. (2008). Decision support for emergency situations. *Information Systems and E-Business Management*, 6(3): 295 - 316.

Vergeer, M., Hermans, L. and Sams, S. (2013). Online social networks and micro-blogging in political campaigning The exploration of a new campaign tool and a new campaign style. *Party Politics*, 19(3), pp.477-501.

Von Hippel, E., Ogawa, S., and P.J. de Jong, J. (2011). The Age of the Consumer-Innovator. *MIT Sloan Management Review*.

Walton, M.E., Devlin, J.T. and Rushworth, M.F. (2004). Interactions between decision making and performance monitoring within prefrontal cortex. *Nature neuroscience*, 7(11), pp.1259-1265.

WCG (2010). The 4 A's: The Engagement Span. WCG. Available online at: <http://blog.wcgworld.com> – [Last accessed on 28 August 2013]

Wen, W., Chen, Y. H., & Chen, I. C. (2008). A knowledge-based decision support system for measuring enterprise performance. *Knowledge-Based Systems*, 21(2): 148 - 163.

Wood, J., Fleming, J., & Marks, M. (2008). Building the capacity of police change agents: The nexus policing project. *Policing & Society*, 18(1): 72 – 87

Yar, M., (2013). *Cybercrime and society*. Sage.

Yahoo News (2016) *Latest: Multiple deaths following teenager's shooting rampage in Munich*. Available online at: <https://uk.news.yahoo.com/live-shooting-at-munichs-olympia-shopping-centre-165630755.html> – [Last accessed on 28 July 2016]

Yilmaz, S. (2013). Tailoring model in reforming police organizations towards community policing. *Journal of Organizational Change Management*, 26(5): 897 - 924.

Yin, R.K. (2013). *Case study research: Design and methods*. Sage publications.

Yonggan, L., Xueguang, Z., Wei, G. and Huanguo, Z. (2015). Research on Methods of Microblogging Sentiment Feature Extraction Based on Dependency Parsing.

Raja-Yusof, R.J., Norman, A.A., Abdul-Rahman, S.S. and Mohd-Yusoff, Z. (2016). Cyber-volunteering: Social media affordances in fulfilling NGO social missions. *Computers in Human Behavior*, 57, pp.388-397.

Zittrain, J. (2010). The Lightning Effect. *New York Times*, September 23, 2010.

Zulkeplia, Z., Hasnanb, N. and Mohtarc, S. (2015) Communication and Service Innovation in Small and Medium Enterprises (SMEs), *Procedia - Social and Behavioral Sciences* 211, pp. 437 – 441.

Bibliography

Abbasi, A., France, S., Zhang, Z., & Chen, H. (2011). Selecting attributes for sentiment classification using feature relation networks. *Knowledge and Data Engineering, IEEE Transactions on*, 23(3), 447-462.

Abbasi, A., Chen, H., & Salem, A. (2008). Sentiment analysis in multiple languages: Feature selection for opinion classification in Web forums. *ACM Transactions on Information Systems (TOIS)*, 26(3), 12.

Agarwal, A., Xie, B., Vovsha, I., Rambow, O., & Passonneau, R. (2011). Sentiment analysis of twitter data. *In Proceedings of the Workshop on Languages in Social Media* (pp. 30-38). Association for Computational Linguistics.

Agrawal, R., Rajagopalan, S., Srikant, R., & Xu, Y. (2003). Mining newsgroups using networks arising from social behavior. In *Proceedings of the 12th international conference on World Wide Web* (pp. 529-535). ACM.

Arnott, D., & Pervan, G. (2008). Eight key issues for the decision support systems discipline. *Decision Support Systems*, 44(3): 657 - 672.

Bowen, G. & Ozuem, W. (2014). *Computer-mediated Marketing Strategies: Social Media and Online Brand Communities*. Hershey, PA: IGI Global

Brézillon, P., & Brézillon, J. (2008). Context-sensitive decision support systems in road safety. *Information Systems and e-Business Management*, 6(3): 279 - 293.

Chang, W. L., and Lo, Y. P. (2012). A social network based group decision support system. *International Journal of Mobile Communications*, 10(1), 41-64.

Evans, J.M. and Kebbell, M.R. (2012). Integrating intelligence into policing practice. In T.Prenzler (ed), *Policing and Security in Practice: Challenges and Achievements*. London: Palgrave Macmillan.

Gaál Z, Szabó L, Obermayer-Kovács N and Csepregi A. (2015) "Exploring the role of social media in knowledge sharing" *The Electronic Journal of Knowledge Management Volume 13 Issue 3 (pp185-197)*

Godwin, B. (2008). Matrix of Web 2.0 technology and government. USA Government. Available online at: http://www.usa.gov/webcontent/technology/other_tech.shtml – [Last accessed on 2 September, 2015]

Hansen, D. L. (2009). Overhearing the crowd: an empirical examination of conversation reuse in a technical support community. In *Proceedings of the fourth international conference on Communities and technologies (pp. 155-164)*. ACM.

Kranjc, J., Smailović, J., Podpečan, V., Grčar, M., Žnidaršič, M., & Lavrač, N. (2014). Active learning for sentiment analysis on data streams:

Methodology and workflow implementation in the ClowdFlows platform.
Information Processing & Management.

Lenhart, A. (2010). Cell phones and American adults: they make just as many calls, but text less often than teens. Washington, DC: Pew Research Center. Available online at: <http://pewinternet.org/Reports/2010/Cell-Phones-and-American-Adults.aspx> – [Last accessed on 31 July, 2015]

Madden, M. (2010). Older adults and social media. Washington, DC: Pew Internet and American Life Project – Available at: <http://www.pewinternet.org> – [Last accessed on 31 July, 2015]

Minazzi, R. (2014). *Social Media Marketing in Tourism and Hospitality*. London: Springer.

Nailor, M.K. & Newman, G.(2013). *Community Policing in Indigenous Communities*. Boca Raton, FL: CRC Press.

Noveck, B. S. S. (2009). Wiki government: how technology can make government better, democracy stronger, and citizens more powerful. Brookings Institution Press.

Osimo, D. (2008). Web 2.0 in government: Why and how. Institute for Prospective Technological Studies (IPTS), JRC, European Commission, EUR, 23358.

Patton, D. U., Hong, J. S., Ranney, M., Patel, S., Kelley, C., Eschmann, R. & Washington, T. (2014). Social media as a vector for youth violence: a review of the literature. *Computers in Human Behavior*, 35: 548-553.

Quarmby, N. (2009). Futures work in strategic criminal intelligence, in J. H. Ratcliffe, (ed.), *Strategic Thinking in Criminal Intelligence*. Sydney: Federation Press.

Rainie, L. & Smith, L. (2008). *Beyond the Soundbite*. Available online at: <http://www.pewinternet.org/2008/06/15/beyond-the-sound-bite>.
Pew Internet – [Last accessed on 22 September, 2015]

Rains, S. A. (2015). Language Style Matching as a Predictor of Perceived Social Support in Computer-Mediated Interaction among Individuals Coping With Illness. *Communication Research*, 0093650214565920.

Ratcliffe, J. H. (2008). Knowledge management challenges in the development of intelligence-led policing. *The handbook of knowledge based policing: Current conceptions and future directions*, 205-220.

Ryberg, T. (2008). Challenges and potentials for institutional and technological infrastructures in adopting social media. In *Proceedings of the 6th international conference on networked learning* (pp. 658-665).

Schade, J., Olofsson T., Schreyer, M. (2011). Decision-making in a model-based design process, *Construction Management and Economics*, Accepted for publication

Tapscott, D., & Williams, A. D. (2008). *Wikinomics: How mass collaboration changes everything*. Penguin.

Walther, J. B., Van Der Heide, B., Ramirez, A., Burgoon, J. K., and Pena, J. (2015). Interpersonal and hyper personal dimensions of computer-mediated communication. In S. S. Sundar (Ed.), *The handbook of the psychology of communication technology*. Chichester, UK: John Wiley and Sons, Ltd.

Welch, M., and Jackson, R. (2007). Rethinking internal communication: a stakeholder approach. *Corporate Communications: An International Journal*, 12 (2), 177-198.

Wyld, D. C. (2008). *The blogging revolution: Government in the age of Web 2.0*. IBM Center for the Business of Government.

Appendix A: Axial Coding of Interviews and Focus Groups

{CATEGORY 1}: {COMMUNICATION STRATEGY}

[CONCEPT]	~Property	≤ Dimension ≥
<p>CONTEXT DEPENDENT ISSUES “Each area may have a different issue which they may like to raise it with the police” (I2)</p> <p>“Customizing in each neighbourhood, each area has different issues I suppose” (I5)</p>	<p>Neighbourhood context “Some of the phenomena exist in a certain neighbourhood but not in others” (FG1 I3)</p> <p>“Customize it according to different neighbourhoods” (I2)</p>	<p>Range of neighbourhood phenomena/issues types/sizes “understand the type and size of problems” (FG1 I1)</p> <p>“helps in knowing the various problems in different neighbourhoods” (FG1 I1)</p>
		<p>Size of neighbourhood population “there should be different accounts for different neighbourhoods based on the number of people.. and some highly populated neighbourhoods may need more than one account” (FG2 I1)</p> <p>“the number of accounts depends on the number of people living in those areas” (FG2 I3)</p>
	<p>Urban/rural context “I think the police should customize the [Twitter] account depending on the geographic region since every region has different topics of interest” (I28)</p>	<p>Range of geography phenomena types “The more urban areas could be generalized while the rural areas could be more customized or specific” (I28)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>SIMPLIFICATION THROUGH FILTERING COMMUNICATION</p> <p>“All I need to know about my neighbourhood should be mentioned on one page. I would not have to filter out things that are important to me” (I36)</p> <p>“From a security perspective, by knowing the type and size of the phenomena it will help the police to classify areas according to the importance [of phenomena] that need to be greater focus” (FG2 I4)</p> <p>“Customization makes it better so people can know where to report an issue based on location” (I29)</p> <p>“there should be a mechanism for filtering the information received from the public” (FG2 I4)</p>	<p>Work facilitation</p> <p>“[Customisation of communication] facilitates the process of identifying the locations and the work of [the different] departments and not mixing phenomena and their solutions” (FG1 I3)</p> <p>“They can filter the information that they think needs attention. Plus, increased number of interactive online users will help the police regulate them better” (I31)</p>	<p>Degree of work facilitation</p> <p>“The police needs to customize the app in twitter to avoid the boundaries as threat/Issues or concern is not only from certain places” (I47)</p> <p>“As rules are going to remain the same for all the neighbourhoods, according to me, they should start with a general account and see the acceptance amongst the general public” (I31)</p>
	<p>Easiness (to the public)</p> <p>“through this experience [account for each neighbourhood], we can highlight events as they happen throughout the day” (FG2 I2)</p> <p>“I would like to have the information about my neighbourhood or about topics. I can choose the topics and neighbourhood of interest. Other information might not be of importance to me” (I39)</p> <p>“Customize the topics accordingly for easy access” (I45)</p>	<p>Degree of easiness</p> <p>“Customize the topics accordingly for easy access” (I45)</p> <p>“I don’t want to spend my time reading things that don’t affect me” (I39)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>CUSTOMISATION OF COMMUNICATION CHANNELS</p> <p>“Customize the account to match the different topics in the neighbourhoods so that I get the required information on one page and do not have to filter out whatever is not needed” (I43)</p> <p>“Customisation is positive idea which transmits to the police the unexpected subjects” (FG1 I1)</p> <p>“[customisation] gives the opportunity to receive a large number of requests from the public and interact with them through specific topics” (FG2 I1)</p>	<p>Customisation by topic</p> <p>“There is an opportunity to focus and highlight some important and sensitive topics, rather than having a general account that addresses topics in general which does not facilitate the process of addressing phenomena in a correct way” (FG2 I1)</p> <p>“Open an interactive channel with individuals of the society to understand the type of problems and phenomena” (FG1 I4)</p> <p>“Customize the accounts according to topics for easier search and use” (I33)</p> <p>“Customize it and make it generic with topics to be related with the police such as anti terror, peace reinforcement, etc. ” (I25)</p>	<p>Range of topic types</p> <p>“a few different categories which would make life of the public a bit easier, like i.e - crime stoppers, society lovers etc.” (I14)</p> <p>“Customize it according to area or topics, such as Law and order, stop crime, traffic, Social commitment etc.” (I10)</p> <p>“have topics like anti-terror, traffic etc. to be monitored by each department within the police department” (I12)</p> <p>“have 4 accounts like law and order, crime, traffic, etc. this way we can use the most relevant accounts for contacting the police when required” (I15)</p>
	<p>Customisation by neighbourhood</p> <p>“It would be best to customize it for different neighbourhoods so information can be filtered at a later date” (I48)</p> <p>“Make [the Twitter account] special for each sectors or areas” (I21)</p> <p>“Customize the account according to different neighbourhoods so as to provide us with filtered data” (I46)</p>	<p>Range of neighbourhoods</p> <p>“Divide it per local areas, like Kalifa city, AL Rowdah etc. This would make it easier for the police to serve the locals in the area” (I17)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>INFORMATION INTEGRATION</p> <p>“Make it one account and keep it open for all topics. The police have to take action for all complaints anyways then why split it” (I8)</p> <p>“Keep general account - Check how it works out, if followers find it useful or not. If not you can segregate it to neighbourhoods or topics” (I41)</p>	<p>Consistency</p> <p>“Keep the current twitter account general so that it will have consistency” (I40)</p> <p>“Keep the current police twitter account general for consistency. Dividing it in topics will confuse the followers” (I42)</p>	<p>Degree of consistency</p> <p>“Customizing would make it look like too many duplicate accounts” (I7)</p> <p>“Too many accounts may look fake or unreal” (I16)</p>
<p>“I don’t agree that there should be apparent accounts for the different neighbourhoods such as Alkahlidya” (FG1 I5)</p> <p>“one main account where everything can be mentioned in detail to the POLICE, instead of having a lot of accounts” (I9)</p>	<p>Effectiveness</p> <p>“I may see a problem in a different part of the city hence a general account would be more effective” (I27)</p> <p>“The Twitter account should be for every one as you never know opinions may come from someone who is concerned regardless of the neighbourhood” (I26)</p>	<p>Degree of effectiveness</p> <p>“The police should keep a general account first. Only after the general account proves helpful and successful should they maybe think about customizing per topic or neighbourhood” (I50)</p>
	<p>Accessibility</p> <p>“General Account. So that we do not have to look for any other page for information” (I34)</p> <p>“All the messages under one account will keep me posted” (I44)</p>	<p>Degree of accessibility</p> <p>“[Twitter] account should be general so we don’t get confused in the search and that we can address issue wherever we are” (I27)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>COMMUNICATION FEEDBACK</p> <p>“I would prefer to have some feedback from the account, rather than we posting stuffs and not hearing back anything from the police” (I7)</p> <p>“A feedback would be nice or even a polite automated reply can do the job, but personal messages are always the better option” (I19)</p> <p>“Depends on the issue raised. Some cases we can expect a feedback and some cases we may have to wait to get the feedback” (I8)</p>	<p>Response time</p> <p>“Immediate feedback on Twitter would be nice given how very quick information is distributed nowadays” (I32)</p> <p>“Immediate feedback on twitter given that almost majority of the population have access on twitter” (I33)</p> <p>“immediate feedback would be a great idea. It would lessen the stress of answering phone calls and meeting people all day” (I41)</p>	<p>Duration</p> <p>“the sooner the feedback the better” (I8)</p> <p>“The twitter account should be checked regularly so that immediate feedback on twitter can be answered” (I40)</p> <p>“Immediate feedback on Twitter would be beneficial to avoid queues, if done in person, and waiting time, if on the phone” (I48)</p>
	<p>Shared feedback</p> <p>“Immediate feedback should be shared. No one will post on such pages until its urgent, and delayed responses won’t help in this case” (I37)</p> <p>“if immediate update or feedback is required, then sharing it is the right thing to do” (I39)</p>	<p>Degree of sharing feedback</p> <p>“Like any customer satisfaction tool, if the person on twitter account can give immediate feedback then its much better as it is useful for others who have the same issue” (I26)</p>
	<p>Feasibility</p> <p>“Immediate feedback would be nice, but not sure how feasible that would be for the police” (I10)</p>	<p>Degree of feasibility</p> <p>“Immediate feedback is almost impossible, but such accounts ensure that department is now aware of any issue raised” (I3)</p>
		<p>Size of issue</p> <p>“for smaller cases complained in the local police station we can expect an immediate feedback from the department” (I11)</p> <p>“Immediate feedback can only be replied to those issues that are very serious” (I47)</p>

[CONCEPT]	~Property	≤ Dimension ≥
		<p>Type of issue “Immediate feedback would be better specially in emergency case, followed by phone call and face to face meetings” (I29)</p> <p>“Immediate feedback on twitter specially in emergency cases, phone calls has also to be prompt and the person who handles the twitter account should be knowledgeable and expert of social media tools” (I30)</p>
	<p>Suitability of feedback “Feedback may be a token of receipt, e.g. you message has been read by the police and action would be taken shortly etc.” (I15) “Immediate feedback is necessary. Whether on twitter or personal message? Doesn’t matter much” (I46)</p> <p>“A feedback at earliest always helps, regardless if it’s over the phone or social media” (I2)</p> <p>“it is about how issues raised by general public must be resolved. In this context, I think if the issue is very serious and personal and would not affect anybody other than the concerned person, then it should be addressed over the phone or in person and not in public. But if the concerns are generic and can adversely affect the general public then an immediate tweet might help” (I31)</p>	<p>Range of feedback methods “interaction should be initially on public twitter then on private as there are personal or professional matters for the interacting individual” (FG1 I3) “in the phone or person they tend to get feedbacks by a call back, with online social media it’s better to get an immediate feedback” (I24)</p> <p>“.. this depends on the issue. If it is a private matter phone or in person might be more effective and harvest more trust between the police and the public. However for general matters it might be a better idea to receive immediate feedback on twitter to save time and so people could use it as a reference for the future (like an FAQ)” (I28)</p>

[CONCEPT]	~Property	≤ Dimension ≥
		<p>Degree of suitability</p> <p>“I prefer personal call or face-to-face meetings, it makes people feel important and make them explain more the issue as twitter will allow only limited number of characters which sometimes is not enough” (I27)</p> <p>“Feedback via Twitter itself would be better that way FAQs can be broadcasted and other followers who had the same question can just backread old tweets” (I50)</p>

{CATEGORY 2}: {COMMUNICATION ENGAGEMENT}

[CONCEPT]	~Property	≤ Dimension ≥
<p>TWO-WAY COMMUNICATION</p> <p>“it is always healthy to have two ways communication” (I1)</p> <p>“Broadcasting [one-way communication] won’t be sufficient” (I37)</p> <p>“They should allow interaction. Ideally they can add a setting to control posts submitted by users. But broadcasting would be a lot like news channels and we wouldn’t want to follow another news channel” (I38)</p> <p>“reaching to the public from a social angle through interactive conversations” (FG2 I1)</p> <p>“allow the public to communicate” (I4)</p>	<p>Interaction</p> <p>“The police should allow interactions and topics from its followers” (I50)</p> <p>“Main motive of social media was to increase interaction. Only broadcasting wouldn’t mean the page is social and I thought this page was for the people” (I39)</p> <p>“Allow the public to make it more interactive and understand the needs and gaps” (I29)</p>	<p>Degree of interaction</p> <p>“few would like to involve in a conversation with the department” (I11)</p> <p>“public can give more information when we post something in the account while contacting them” (I4)</p> <p>“Keep it only as broadcasting for sending information to the public only” (I44)</p> <p>“Allow people to respond, otherwise what would be the purpose of having a twitter account?” (I34)</p>
		<p>Range of ways for interaction</p> <p>“It all depends on each situation; there may be few cases which may not be discussed in an internet forum where others can view the conversation, whereas topics mentioned here now can be given feedback at the earliest” (I12)</p> <p>“It should be broadcasting only and you can have a different account to provide comments if any” (I36)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>BRINGING COMMUNITIES AND POLICE CLOSER</p> <p>“communication with the public in participative, interactive conversations is critical because it creates a link between the police and the community” (FG2 I3)</p> <p>“reach collective solutions between both parties, which will lead to an excellent relationship between the public and the police” (FG2 I4)</p> <p>“would prefer to have interactions with the police when I communicate with them” (I22)</p> <p>“The public should participate and interact with the police, after the police department works for the wellbeing of the public and they have the right to raise their voice” (I2)</p>	<p>Transparency</p> <p>“two ways communication to keep some discussions open with the public, that’s the whole point of using social media to interact with the public” (I1)</p> <p>“decision making should be synchronised but the solutions and decisions should not be showed to the public so as to maintain the authority of the police, and so the public does not feel that this is an acquired right” (FG1 I5)</p> <p>“Upon resolution of such issues, there nothing that prevents informing the public that the authorities have taken the required measures and decisions to solve these issues” (FG2 I2)</p>	<p>Degree of transparency</p> <p>“Twitter is an interactive tool, it makes people get closer and makes me feel that I can access the police any time in case of emergency and I can get immediate answers. Broadcasting only will be boring and I might not follow it” (I30)</p> <p>“Regarding information related to a high security or social context, police should deal with these within the organisation, without revealing the type of phenomenon especially which relates to state security or the subject of a medium importance, and only inform the public that the phenomenon has been dealt with and resolved by the police” (FG2 I1)</p> <p>“a mechanism to deal with decisions without necessarily informing the public based on the type of phenomena experienced, and consequently the type of decisions that must be taken, whether it is simple and can be handled locally and quickly or should be escalated to upper authorities” (FG2 I3)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Confidence “participative, interactive conversations .. to gain public confidence” (FG2 I3)</p> <p>“contributes to the public feeling [confident] through listening to them and discussing about solutions .. because the problems will be solved in a healthy and legal way which leads to governance” (FG1 I4)</p> <p>“Engaging the public in interactive conversations leads to public confidence in the police” (FG2 I1)</p> <p>“when the public is engaged to get their opinion on a specific subject or phenomenon, they gain trust and responsibility towards their community and neighbourhood in which they live, which helps to maintain security and reduce the incidences or phenomena in the future” (FG2 I2)</p> <p>“interactions ensure continuity in the future because it creates an excellent environment for communication between the parties, whilst gaining public trust” (FG2 I5)</p>	<p>Degree of confidence “understand their problems and needs .. will make people feel more safe” (I27)</p> <p>“increases trust of citizens and expatriates in the presence of departments that thrives to address the phenomena that cause anxiety” (FG1 I1)</p> <p>“If I decided to have a twitter account, then I decided to go public, dealing with the police will make me feel safe, we trust our people and we have full faith in our police department” (I30)</p> <p>“When there is confidence by the public, there is credibility and abundance of accurate information in the interaction” (FG2 I2)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>COMMUNICATION MOTIVATION</p> <p>“to make the society interact with the police in finding solutions” (FG1 I2)</p> <p>“repeating phenomena may be the reason for which citizens in these neighbourhoods interact and find solutions for it” (FG1 I2)</p> <p>“Allow the public to .. add discussions for queries and suggestions” (I42)</p>	<p>Awareness</p> <p>“highlighting social phenomena helps the public in communicating and interacting with the police” (FG1 I4)</p> <p>“benefit from ways to know the type of phenomena and problems” (FG1 I1)</p> <p>“Engaging the public in interactive conversations allows the police to activate awareness” (FG2 I2)</p>	<p>Degree of awareness</p> <p>“accessibility to the type of phenomena in such neighbourhoods” (FG1 I2)</p>
	<p>Participation</p> <p>“Allow the public to participate more and interact more with each other and with the police” (I35)</p> <p>“The police should allow the public to participate by allowing them to add discussions for queries and suggestions” (I40)</p> <p>“The public should participate and interact with the police, after the police department works for the wellbeing of the public” (I2)</p> <p>“Public should be allowed to publish and participate for growth and betterment of individuals” (I37)</p> <p>“Start allowing the public to participate” (I45)</p>	<p>Frequency of participation</p> <p>“Broadcasting it only, would make us follow the page lesser. It is simple one way communication is never interesting” (I31)</p> <p>“Keep the general account. Customize it to match neighbourhoods accordingly if the feedback from followers is high” (I32)</p>

[CONCEPT]	~Property	≤ Dimension ≥
		<p>Number of participants “increased number of interactive online users will help the police regulate them better” (I31)</p>
	<p>Confidentiality “It’s easy to find out who you are and what you posted in twitter, so we can't really mention something dangerous or cautious in twitter in a secure way” (I9)</p> <p>“few may be afraid to report any crime or activity for privacy reasons” (I23)</p> <p>“No issue with confidentiality, people are responsible of what they tweet, they are also dealing with the police and should have full trust in them” (I27)</p> <p>“When maintain privacy by the police, it allows the interacting members of the public freedom in the type of talks and ensures safety for those interacting which encourages them to provide information on specific phenomena that may be caused by certain people in the neighbourhood and hence making it easier for the police to identify these people quickly” (FG2 I1)</p>	<p>Range of ways to keep confidentiality “We can’t really afford privacy in any social media, the best you can do is use a fake account while complaining about anything serious” (I15)</p> <p>“create a fake profile if that’s a big concern” (I25)</p>

{CATEGORY 3}: {GOVERNANCE}

[CONCEPT]	~Property	≤ Dimension ≥
<p>CONTEXT DEPENDENT DECISION-MAKING “decision making from smaller decentralised centres which exists inside the neighbourhoods is better because [they] can solve what is related to these areas” (FG1 I5) “identify the suitable ways to solutions”(FG1 I1)</p>	<p>Neighbourhood context “understand the type and size of problems” (FG1 I1) “From a security perspective, by knowing the type and size of the phenomena it will help the police to classify areas according to the importance [of phenomena] that need to be greater focus” (FG2 I4)</p>	<p>Type of neighbourhood “It is possible to address phenomena through decentralised centres by getting to know the size of the phenomena” (FG1 I1)</p>
	<p>Issue context “I think decision making can be done as per each scenario, and this can be done locally or at the HQ depending on the issue” (I6) “the decision-making should be distributed at neighbourhood centres that follow the main centres depending on issues and their importance” (FG2 I3)</p>	<p>Type of issue “make decisions related to interactions by the public through the [Twitter] account, which includes social phenomena to be resolved urgently because of the resulting inconvenience and concern for these populations” (FG2 I1) “the type of phenomena to decide whether the decision making process should be at the main police centre or by delegated officers in local neighbourhoods” (FG2 I4)</p>
		<p>Size of issue “It is possible to address phenomena through decentralised centres by getting to know the size of the phenomena” (FG1 I1)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Decision criticality</p> <p>“The key decisions should be centralized, and then delegated to respective teams / police stations” (I38)</p> <p>“Minor and specific problems should be dealt with the local police station while the major issues should be addressed to the police headquarter” (I48)</p> <p>“some phenomena cannot be delayed and its solution may be simple” (FG1 I1)</p> <p>“in some cases, and some of the phenomena that may be somewhat serious the public will still be anticipating the solution and awaiting participation, but because of its specificity and importance which may be of national security which makes the relevant or security authority do not want public participation to preserve national security” (FG1 I5)</p> <p>“decision-making should be distributed at neighbourhood centres that follow the main centres depending on issues and their importance” (FG2 I3)</p>	<p>Degree of criticality</p> <p>“helps in distributing experts for solving problems relative to the size of the problem and the existing phenomena” (FG1 I1)</p> <p>“Small and minor issues can be dealt in the local stations and other bigger problems can be escalated to the HQ” (I8)</p> <p>“small cases can be dealt locally and the bigger once can be sent to the HQ” (I10)</p> <p>“It depends, I think small cases can be handled in the local police station whereas the bigger issues can be dealt at the HQ” (I22)</p> <p>“I think that the decisions split into two types, a secondary type where a decision needs to be taken quickly and on the spot because it relates to the public or a phenomenon that belongs to the public, while the other is a primary type where a major decision need to be taken that is related to security events in which it must security measures need to be studied upon which important decisions making depends” (FG2 I1)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>POWER DISTRIBUTION</p> <p>“There must be distributed powers to authorized persons in police and which are located in residential neighbourhoods” (FG2 I1)</p> <p>“may be decentralize a limited amount of power can prove to be a step towards improvement” (I34)</p> <p>“I think it should be local based police station which should report to the central headquarters” (I36)</p> <p>“Keep it centralized but direct the local stations so that no stone is left unturned to manage the people” (I39)</p>	<p>Empowerment</p> <p>“give more power to the local station” (I4)</p> <p>“Give more power to the local station” (I16)</p> <p>“Give power both in the police headquarter and local police stations” (I45)</p> <p>“facilitates in solving problems, save time, helps in narrowing down the problems and participation of the community in this neighbourhood in solving what phenomena are annoying them” (FG1 I2)</p>	<p>Degree of empowerment</p> <p>“Distribute the decision making powers accordingly. What can be handled by the local police should be left to them and everything else should be managed by the Headquarters” (I46)</p> <p>“the decision-making should be distributed at neighbourhood centres that follow the main centres depending on issues” (FG2 I3)</p> <p>“Decentralize. Allow Local Police stations to deal with minor and specific problems and major problems can be handled by the headquarters” (I35)</p>
	<p>Expertise</p> <p>“the decision maker should be from persons who are delegated and trained on making the right decisions” (FG2 I3)</p> <p>“It is possible to address phenomena through decentralised centres by .. trained professionals who follow the main centre to address phenomena at its source” (FG1 I1)</p> <p>“decentralisation of decisions to be given to authorized and trained persons in the local centres in the neighbourhoods” (FG2 I5)</p>	<p>Degree of expertise</p> <p>“keep it all in the HQ, appoint a separate team for it who are experts in their tasks and the local police can protect the community” (I21)</p> <p>“helps in distributing experts for solving problems relative to the size of the problem and the existing phenomena” (FG1 I1)</p>

[CONCEPT]	~Property	≤ Dimension ≥
		<p>Judgement ability “Centralised better so they don’t leave it to personal judgment” (I29)</p> <p>“Keep it centralized so we get to be sure that the decision is not based on a person’s mood or judgment rather than being based on rules and laws. The headquarter decision will have my trust more” (I30)</p>
<p>PARTICIPATIVE DECISION-MAKING “Participation in decision-making continues to provide an excellent environment for real interactions” (FG2 I1)</p> <p>“there is nothing that prevents partial participation after filtering and studying of some of the decisions” (FG1 I1)</p> <p>“in easy situations and phenomena that can be solved with the participation of the public, the decision making process must be decentralized and decisions should be taken immediately after the debate with the interacting participants in the account based on the information available” (FG2 I1)</p> <p>“Express of opinion through participation in solutions” (FG1 I2)</p>	<p>Understanding of context “the current time requires the participation of the public in all decisions and solutions related to the phenomena that constitute concern and nuisance to them, because some segments of society are different from others” (FG1 I3)</p> <p>“interacting individuals may include experts in social fields” (FG1 I2)</p> <p>“interacting with the public in real interactions provide true, participative that lead to activating the role of the community in solving problems and phenomena that cause concern and a nuisance to communities in residential neighbourhoods” (FG2 I4)</p>	<p>Degree of context variation “some segments of society are different from others” (FG1 I3)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Competence “an account that covers and highlights the phenomena that cause disturbance and anxiety to citizens [neighbourhoods] who may find solutions for it from experience” (FG1 I3)</p> <p>“Empowerment is very important but it should be given to the right person in each station who will have to undergo a lot of training on decision making process so we are sure that he takes the right decision” (I26)</p>	<p>Degree of competence of a community expert “given that there are qualified people for making decisions” (FG1 I2)</p> <p>“Give more power to stations better as it minimize the time and efforts of both parties but the decision should be with one person only who is wise enough to take vital decisions” (I27)</p>
	<p>Activity/participation “interactive public can be divided into two groups, a group that is effective and active who interact on a daily basis and a group occasionally participate when they are exposed to an inconvenient incident.” (FG2 I4)</p>	<p>Frequency of activity/participation “[the police] should take care of the active group and meet their needs to ensure they continue their interactions and provision of information that helps in solving social phenomena. The second group can be dealt with in a way that motivates them and make them an active group” (FG2 I4)</p>
<p>Shared Decision-Making Impact “More power to local police station will lead to better management of emergencies” (I34)</p> <p>“The police should give more power to local police stations for quicker turnaround response on minor problems at least” (I41)</p>	<p>Easiness “it is simpler and faster to address phenomena by having it dealt with near its source” (FG1 I2)</p> <p>“decision making from smaller decentralised centres .. facilitating the work of the main centre in dealing with the big size problems which makes decision makers concentrate more in national security issues” (FG1 I5)</p>	<p>Degree of easiness “having an account for each neighbourhood makes the decision making process difficult [for the police] and hard to filter the phenomena because of the large number of .. neighbourhoods” (FG1 I4)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Performance efficiency “.. giving more power to local police stations in neighbourhoods could allow them to do their jobs more efficiently since they are better used to the culture within their respective neighbourhoods” (I28)</p> <p>“Give power to the local police stations as well so that they can also be aware of the minor and specific issues in the neighbourhoods” (I33)</p>	<p>Range of performance efficiency “this experience [account for each neighbourhood] saves time, effort and resources” (FG2 I2)</p> <p>“Give more power to local police stations so as to perform better. As officials from the headquarters cannot be everywhere” (I37)</p>
	<p>Proactive policing “Less regulation could also motivate local police stations to be more proactive with their service, reducing red tape could also eliminate time and money wasted in delay action in order to receive specific orders from headquarters” (I28)</p>	<p>Degree of proactivity “The police should give more power to local police stations to encourage immediate action on the problem limited to its neighbourhood. Waiting on the police response would waste time” (I50)</p>
	<p>Representative solutions “customised accounts enable the opportunity to know the solutions from engaged public” (FG2 I1)</p> <p>“customisation provides support for the police and community alike because it may help to reduce social phenomena that are difficult to solve by the police in advance because the solutions used to come only from the security perspective” (FG2 I5)</p>	<p>Degree of representativeness “when the public is engaged, it will create joint solutions” (FG2 I5)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Speed “decentralisation of decision making will lead to faster and positive response which will be more convenient for the public” (FG1 I4)</p> <p>“Divide it among local police stations and the HQ depending on each case to keep the work organized and the decrease the processing time” (I19)</p> <p>“Give more power to local police stations in order to quicken action on problems” (I43)</p>	<p>Time-to-decision “Solution should be instantaneous and fast” (FG1 I2)</p> <p>“fast decision making is important” (FG1 I4)</p> <p>“we have to have the ability of faster decision making because it concerns the community” (FG1 I3)</p>
	<p>Consistency “Centralized at the police headquarters only for consistency” (I44)</p> <p>“For uniformity, it is best to keep the current decision making unified only at The police headquarter so that they will be informed first, then they can pass it on to the local police station” (I40)</p> <p>“Best to keep the current decision making unified only at the police headquarter so that they will be informed first, then they can pass it on to the local police station” (I42)</p>	<p>Degree of consistency “The main centre should be informed of all what has been reached of solutions concerning the different phenomena in the residential neighbourhoods that may have been difficult to resolve but with collaboration with the public they have identified new ways to resolve it within the areas that exist in the phenomena” (FG2 I5)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Decision quality “quality will be realised by implementing decentralisation in decision making” (FG1 I3) “sometimes when a decision is made about a phenomenon [with the participation of the public] it would make it easier for officials from other residential neighbourhoods to make decisions with the participation of the public due to similarity of some phenomena” (FG2 I1)</p>	<p>Range of types of phenomenon “true and detailed interactions by the police and the community leads to solutions to the phenomena depending on their type and size” (FG2 I2)</p>
		<p>Size of phenomenon “true and detailed interactions by the police and the community leads to solutions to the phenomena depending on their type and size” (FG2 I2)</p>
<p>MONITORING & CONTROL OF COMMUNICATION & DECISIONS “The police should ensure to monitor the information posted or at least give the public guidelines” (I41) “Just a noted receipt on the issue raised would keep the public happy, so that we are aware that the account is been actively monitored” (I9) “It would be safe if interactions on twitter will be checked regularly” (I33) “Best to keep it as only broadcasting given the conservative culture of the UAE. If they do decide to loosen the reign and allow the public to share their own topics/participate, the police should allocate a resource to actively monitor these discussions” (I32)</p>	<p>Complexity “one account is fine, it would be easier to monitor and would look authentic” (I18) “think it’s better to keep it centralized and decisions can be taken at the HQ and monitored by senior staffs and ministers” (I5) “Abu Dhabi is the biggest emirate, so, the number of neighbourhoods will be very high and this will lead to high number of twitter accounts to manage. So, keeping it generic makes all the more sense to me. So that every national of the region gets all the information and details confined in one page” (I31)</p>	<p>Degree of complexity “the more accounts the more complex it becomes” (I23)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Quality</p> <p>“There must be monitoring and sharing of reports from these neighbourhood police centres that made these decisions with the main police centre for sharing and assurance of the quality of decisions and the action mechanism” (FG2 I1)</p> <p>“it would be safer to make sure interactions are actively monitored to keep discussions clean” (I43)</p>	<p>Degree of quality</p> <p>“decentralizing power to local police station .. would lead to better management of people and the headquarters can still monitor and manage local police stations. This means we have a backup plan i.e. if things aren’t managed by a local police station, they can be moved to Headquarters” (I31)</p> <p>“Give more power to local stations, but also make sure all the actions taken in local stations are monitored by seniors, I read about some random things which police officers did a few years back. So keep it all monitored” (I16)</p>
	<p>Measures</p> <p>“The police can appoint someone who is monitoring these accounts 24/7 and keep us informed that they have got our message and would be looking into to the issue, etc” (I4)</p> <p>“the police can employ a person to constantly monitor the account and reply to make the account more lively” (I14)</p>	<p>Range of types of measures</p> <p>“Give more power to local police stations in order to quicken action on problems. Once more power is given, a type of measure should be used to monitor whether the public finds this more beneficial to their overall safety” (I32)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>Escalation</p> <p>“the work can be divided to be more efficient, so minor issues can be dealt in the local police stations and bigger ones can be sent to the police HQ” (I11)</p> <p>“To an extent the government can give the local officers some power to solve small cases, however bigger cases needs to be sent to the HQ is my opinion” (I17)</p> <p>“in the event of communication threads by the public with security issues, then it is the responsibility of the officer in charge to raise these issues to the authorities to take the necessary decisions and security measures that may require the involvement of other specialised parties in such subjects” (FG2 I2)</p>	<p>Size of issue</p> <p>“I think it’s all depends on each case; smaller ones can be dealt in the local police station whereas the bigger one needs to escalate to the HQ” (I13)</p>	<p>Degree of criticality</p> <p>“It’s better to divide the work load for the officers, petty cases can be solves in the local police station and the bigger ones can be sent to court or HQ” (I14)</p> <p>“Decision making can be done in both ways, for instance any local problems can be dealt in the local station for smaller crimes or activities, whereas anything beyond a certain point should be reported to the headquarters” (I12)</p>

{CATEGORY 4: {COMMUNICATION PRIVACY}}

[CONCEPT]	~Property	≤ Dimension ≥
<p>MAINTAINING PRIVACY OF PARTICIPANTS</p> <p>“privacy is a very important factor for individuals in terms of their physiological comfort in introducing and discussing phenomena which makes interaction more positive” (FG1 I1)</p> <p>“Privacy is always a concern and I think twitter can be used for generic discussion and if there is something serious to report then I won’t use twitters ” (I5)</p> <p>“I won’t be worried about privacy when I am interacting with the police because I am helping the government and police” (I14)</p> <p>“Twitter is only use for information and updates, privacy is not relevant” (I44)</p> <p>“Privacy is an important factor in communication and especially with the police” (FG2 I4)</p> <p>“with information that may be carrying security related inputs, privacy becomes very important to maintain the security of the society and the security of interacting users in the account” (FG2 I3)</p>	<p>Privacy threats</p> <p>“privacy is very important as when a person provides important information, there may someone who is lurking for this person and hence could be in danger” (FG2 I1)</p> <p>“Internet is not a private place; there is no privacy in any form of social media” (I13)</p> <p>“You cannot afford privacy in such accounts; obviously everyone gets to see who you are when yon interact with such accounts, unless you have a fake account” (I18)</p> <p>“When people interact, they should know that they are putting their own good name at stake hence they should comment wisely” (I48)</p>	<p>Degree of privacy threat</p> <p>“.. [privacy] would be the main issue with interacting with any police organization through social media. Some things said could be held against the person and the proof is that I worried for a second before answering this question until I realized it will be anonymous, but as an Emirati national I would not be as worried about my privacy as expats who are not always guaranteed stability within the country” (I28)</p> <p>“Twitter is a handle that people use to share opinions, for open discussions. Whatever we publish on twitter is what gets shared. So there is no encroachment of privacy” (I37)</p> <p>“Sharing of information in twitter does not invade the privacy” (I45)</p> <p>“privacy is important to me, although we are free to say our opinions with limitations” (I47)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Privacy perception</p> <p>“Privacy would be an issue for me and I might not want to speak my mind sometimes. But, if it is urgent and requires help, it needs to be put there. Simply put, if we are in need, we will contact the department anyhow” (I31)</p> <p>“I feel safe, it’s the police, I am not scared because I’m not doing anything wrong” (I29)</p> <p>“There should be no problem to share thoughts with the police and people should be proud of voicing it so I don’t see why privacy is an issue” (I26)</p>	<p>Range of privacy perception</p> <p>“I personally don’t care about privacy in my social media, I am not sure if others think the same way” (I22)</p> <p>“Privacy is a fickle thing so people should be wary if they think they are comprising their privacy by interacting with other people on topic posted. If they aren't ready to give it up, then don't bother interacting” (I41)</p> <p>“There is no privacy in twitter, so if you expect privacy we cannot use the account” (I10)</p>
<p>Ensuring Privacy</p> <p>“one could preserve privacy in some areas through avoiding indication to places near their home – or saying there is this phenomenon next to my house exactly, to preserve the security of the public and avoid problems in the future” (FG1 I4)</p> <p>“the police as a security agency is responsible for maintaining security and stability of the society” (FG2 I4)</p> <p>“privacy can be applied through a promise by the police pledged on the social account to maintain the privacy and protect the identity of all members of the community who are interested in the interaction on the account” (FG2 I1)</p>	<p>Privacy legislation</p> <p>“Its important to get customer feedback - but with regulation” (I35)</p> <p>“Privacy would always be a concern for social media. This wouldn’t be any different for accounts like that. But is I have signed up for this, then I have agreed to the terms and conditions” (I39)</p> <p>“Privacy on twitter is not an issue as long as I don’t violated any rules or law” (I40)</p>	<p>Degree of suitability of privacy legislation</p> <p>“have legislation that enforces privacy before starting the interaction and preserving rights for individuals who interact” (FG1 I1)</p> <p>“I don’t think there is a possibility to implement privacy in Twitter” (FG1 I2)</p> <p>“Protect people's privacy, so they can communicate with the police freely” (I34)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Anonymity “If I am reporting something serious then I would call the police or go to the station rather than using twitter to remain unknown” (I4)</p> <p>“when starting such an initiative [of communicating with the public], it must cover all the aspects that may threaten the security of the interacting participants through the [Twitter] account or the disclosure of their identities” (FG2 I4)</p> <p>“People hide their identity to speak something that is unacceptable, which they would not want to do for the police department. Plus, social media is public, if that would have been a concern; people wouldn’t have been using it” (I31)</p>	<p>Degree of anonymity “My privacy is very important. I would not like my information to be shared or circulated.” (I38)</p> <p>“If people are so paranoid about privacy, they can just set up another account parallel to their personal account. It's overall best to be careful with what you say. The police should monitor offensive material” (I50)</p>
	<p>Optionality “[privacy] should be made optional .. because it may not be possible for a person to identify whether the subject is critical, unlike the police, who can identify all types of phenomena” (FG2 I3)</p> <p>“I get to interact with the people whom I choose to” (I1)</p>	<p>Set of options “[privacy] could be made optional in some conversations whilst interactions can be made visible for all to the community benefit such in the case of informing the public of an accident near them or low vision on the road at certain times of the year to avoid and reduce accidents” (FG2 I2)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Technology</p> <p>“I suggest finding applications that can be integrated with the social networking systems to maintain the privacy and also recording the information and tweets that have been shared by the participants and observers of the account” (FG2 I4)</p> <p>“some of the topics cannot be open for everyone's participation because of its critical importance and specificity. Therefore it is better to have a way to communicate with the person themselves through a private way created by the police to maintain the privacy and security. For example, a conversation could start on the social account but after classifying the subject as critical, the conversation should moves to be private” (FG2 I2)</p> <p>“In the future, I suggest a special account for active people for providing important information on serious phenomena or that must be dealt with quickly, and this account ensure to the police and individuals from the community complete privacy” (FG2 I3)</p>	<p>Degree of suitability of technology</p> <p>“alternative ways to preserve privacy such as communicating via email and messaging after initial interaction on Twitter” (FG1 I2)</p>

{CATEGORY 5}: {INTELLIGENT POLICING}

[CONCEPT]	~Property	≤ Dimension ≥
<p>Knowledge Sharing</p> <p>“They should allow the public to post and comment on the topic so the police can actually get some ideas or tips from the public” (I47)</p> <p>“.. having the police open a two way discussion could give valuable feedback from the public that could help it in many ways. First to improve its services and communication, while also the public could provide tips that could allow the police to do its job more efficiently” (I28)</p> <p>“There must be monitoring and sharing of reports from these neighbourhood police centres that made these decisions with the main police centre for sharing and assurance of the quality of decisions and the action mechanism” (FG2 I1)</p>	<p>Value of knowledge</p> <p>“these accounts could lose some of the interaction if there are some individuals who give much irrelevant talk which does not have value and upsets some other participants” (FG1 I3)</p> <p>“This info is pretty generic to be honest and looks repetitive, specially the late night gathering topic” (I22)</p> <p>“from security and financial perspectives, [customisation] saves the police effort and the burden of hiring sources for information because when interacting with the public [the police] secured information from true sources in members of the community” (FG2 I2)</p> <p>“interactive conversations earns the interactions a security angle through helping the police with accurate security information which helps the security role of the police and may limit the occurrence of phenomena in the future because it may add new points and new interactions” (FG2 I1)</p>	<p>Extent of value</p> <p>“If the discussions and interaction are ineffective in a subject then in this case it should be addressed by more informational depth” (FG1 I4)</p> <p>“having customised accounts enable decision-makers to be fully aware of the problems and phenomena that are happening” (FG2 I1)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>2-way knowledge sharing</p> <p>“.. [the police] has sufficient knowledge and intelligence but it also withholds a lot of information for safety reasons. I do not see a way where both sides would be completely satisfied but the police should do its best to be as transparent as possible with the public” (I28)</p> <p>“customisation according to neighbourhoods or topics is excellent from a social security perspectives. From a social perspective, it will allow the police to communicate with the public and get to know all the phenomena surrounding them and learn also what is going on from the events within these residential areas” (FG2 I4)</p> <p>“If its only broadcasting the department will never know what the public think about them and can never hear our views” (I1)</p>	<p>Degree of 2-way knowledge sharing</p> <p>“So far it doesn’t help, we need to interact more and get insightful information” (I30)</p> <p>“Current information is not sufficient. More interactions needed” (I35)</p> <p>“Messages providing information help though there is always more room for improvement based on the demands of the public” (I32)</p> <p>“[Twitter] information doesn’t help much as we are looking for more information like ‘safety procedures’ in some circumstances” (I27)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Interaction</p> <p>“Current interactions can benefit the police and the people” (I45)</p> <p>“Current interactions on twitter can give additional knowledge not only to the public but at the same time to the police itself” (I40)</p> <p>“Any information provided on real time basis can help the department perform better and I am sure that everybody would be interested to know the police’s view on what’s happening. So, the information on twitter will always be useful and those who do not need the information can un-follow anytime they want” (I31)</p>	<p>Degree of interaction</p> <p>“Till now these are just messages but the quality of content/information is expected to be better with time and increased number of users” (I38)</p> <p>“It looks ok, but more information can make it more interactive. It seems somewhat generic now” (I21)</p> <p>“The current account doesn't seem to have a load of information so doesn't provide any help for now” (I48)</p> <p>“current interactions do help the police, but they will have to improve on the number of interactions” (I37)</p> <p>“Its not very active, I don't see a lot of interaction, they need to write more” (I29)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>Understanding Phenomena “Participative, interactive conversations .. to identify the problems and phenomena that cause inconvenience and concern to the public” (FG2 I3)</p> <p>“it could be that a participant is of the proactive type, who writes all what he sees in the street or the neighbourhood where he lives which helps in understanding a specific problem or phenomenon” (FG1 I3)</p> <p>“The current account has content with the same 3-4 points such as begging, gathering late at night, road safety and traffic, these points do help the police but are too generic” (I1)</p>	<p>Sufficiency “Some topics require more depth in terms of knowledge, and the available information by the public may not be enough, thus I suggest to enrich some important issues that need important decisions with more research and investigation” (FG1 I2)</p> <p>“There must be applied privacy before starting communication with the public to ensure gaining confidence which will engage them in real participation in successful interactions to obtain the required information about phenomena ” (FG2 I5)</p>	<p>Degree of sufficiency “the information is sufficient depending on the need in which the public may interact with the police through the account” (FG1 I2)</p> <p>“the information is sufficient but sometimes it needs enriching” (FG1 I3)</p> <p>“Doesn't look like the current account is being used much yet to share information hence it's not of much help” (I50)</p> <p>“it does help in a way now, but can be more specific. For instance about late gathering they could say where exactly it happens for the police to take action” (I10)</p>
	<p>Accuracy “When there are active interactions, it allows the police to be fully aware with phenomena and events that happen in neighbourhoods through a tweet or a photo, so they can get ‘rapid reporting’ feature, which allows them to control these events and phenomena accurately and fast, for example an interaction on the subject of reporting a fire through a tweet, whilst another posts a photo of the fire, so the fire brigade is able to reach the scene and a have an accurate pre-description, further losses can be avoided” (FG2 I2)</p>	<p>Degree of accuracy “It can activate an excellent service which determine the locations of events or problems or phenomena accurately through public interaction” (FG2 I2)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>Understanding Communities</p> <p>“Interactive discussions are always better as it gives the chance to understand more the people and keep asking more related questions” (I26)</p> <p>“Can work the psychological condition of the community in the area of the account through their tweets” (FG2 I3)</p> <p>“Interaction between the police and Twitter users is more effective as it is considered a tool to listen to the public and understand their problems and needs” (I27)</p> <p>“Allow the public to make it more interactive and understand the needs and gaps” (I29)</p> <p>“it is more for the police department to understand which way is best to communicate with the public” (I1)</p> <p>“understand their problems and needs .. will make the police stay up to date with the opinion of people in the city” (I27)</p>	<p>Sufficiency</p> <p>“the current content is generic and it should have more topics for discussion soon once the people come to know about such accounts” (I2)</p> <p>“it’s a mix of both useful and generic messages for the public, however the department should always have an eye all the updates and act accordingly to each message and interaction” (I3)</p> <p>“sufficient knowledge to all is very important so people can unite and fight any problems or issues that the country’s facing if any issue arises” (I47)</p>	<p>Degree of sufficiency</p> <p>“we can give general information but too many details can cause security and privacy issues” (I13)</p> <p>“The proposed information is very sufficient to make decisions in simple subjects but the important decisions need a depth in information, wider exposure and more specific analysis due to lack of knowledge of the cultural and scientific levels of the interacting users” (FG1 I2)</p> <p>“I think most posts and tweets here are common and do not look like a government operated account. Too generic according to me” (I17)</p> <p>“Interactions on twitter can contain helpful information for the police and people, though it can also have irrelevant messages” (I33)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Accuracy</p> <p>“From a security perspective [the police] can identify the people stirring up problems and intending to destabilize security in the neighbourhood” (FG2 I3)</p> <p>“There is another point that must be verified which is the correctness of the information and the credibility of the people that participate on the account through their whereabouts, as there are people who search for accounts that are inactive only to tamper with the publication of rumours and incorrect information” (FG2 I4)</p>	<p>Degree of accuracy</p> <p>“the police could provide discussion panels to get accurate information that lead to effective decision making” (FG2 I5)</p> <p>“there is no ways to preserve privacy as it is a public interaction channel and there would be individuals who may put untruthful subjects” (FG1 I4)</p>
	<p>Perspectives</p> <p>“after the police department works for the wellbeing of the public and they have the right to raise their voice” (I2)</p> <p>“listen from the people” (I3)</p> <p>“interact with the public to understand the issues better” (I10)</p> <p>“so that the police can listen to their concerns and work on them” (I37)</p> <p>“According to me, for the people means hearing them out” (I39)</p>	<p>Range of perspectives</p> <p>“We all have different views” (I11)</p> <p>“There are other ways for the public to contact the police” (I20)</p> <p>“We can get the updates on the news portals, it would be better if they listen to what we have to say” (I31)</p>

[CONCEPT]	~Property	≤ Dimension ≥
<p>Improvement through Intelligent Policing “the police should start allowing the public to participate and interact more, so this can serve as guidance for improvement based on the opinions and feedback of the public” (I33)</p> <p>“Public people should also interact so that the police gets to see their problem areas and works for their improvement” (I46)</p> <p>“Allow the public to participate and interact more to serve as guidance for improvement based on the opinions and feedback of the public” (I49)</p> <p>“in the future it will allow more opportunities for new and innovative ways” (FG2 I2)</p> <p>“I think we can write a generic complain and provide the police with our contact info to provide them with more detailed information and intelligence” (I12)</p>	<p>Practicality “helps in understanding and addressing phenomena with practical methods” (FG1 I2)</p>	<p>Degree of practicality “I don’t think they can provide too much intelligence through Twitter; it has to be done over the traditional way either by phone or in person so get more info” (I11)</p>
	<p>Innovation “interactive conversations help to provide innovative solutions” (FG1 I3)</p>	<p>Degree of innovations “The police should allow more interaction and participation through discussions to get ideas from the general public” (I48)</p>

[CONCEPT]	~Property	≤ Dimension ≥
	<p>Lessons learnt</p> <p>“the police can build a knowledge base that could be needed in the future to support the decision-maker in selecting a solution of a problem or phenomenon” (FG2 I2)</p> <p>“repeating phenomena may be the reason for which citizens in these neighbourhoods interact and find solutions for it” (FG1 I2)</p> <p>“when phenomena repeat, there will be the knowledge and previous solutions among neighbourhoods, which will speed up solutions and satisfy the communities and the public with police work and consequently create an interactive and participative environment between [the public and the police]” (FG2 I1)</p> <p>“sometimes when a decision is made about a phenomenon [with the participation of the public] it would make it easier for officials from other residential neighbourhoods to make decisions with the participation of the public due to similarity of some phenomena” (FG2 I1)</p>	<p>Extent of learning from experiences</p> <p>“provides the opportunity to access and participate in knowing what could happen in the future in the neighbourhood they are living in, which could prepare them to know the way to address it when it happens to them” (FG1 I2)</p> <p>“must create a centre concerned with collection and analysis of all the information and the decisions that have been taken [from the different neighbourhoods] and do studies that may reduce or avoid the occurrence of such phenomena in this residential neighbourhood, or other residential neighbourhoods in the future” (FG2 I5)</p>

Appendix B: Twitter Proof of Concept Screen Shots

The screenshot displays the Twitter profile of TSP AD (@tsp_ad). The profile header includes the account name, handle, and bio in Arabic: "تم انشاء هذا الحساب لاغراض البحث العلمي في دراسة الظواهر الاجتماعيه." It also shows the account was joined in November 2014. The statistics bar indicates 42 tweets, 26 following, 426 followers, and 4 likes. The main content area shows a list of tweets and replies, all in Arabic, with dates ranging from August 1, 2015, to September 7, 2015. Each tweet includes a reply icon, a retweet icon, a heart icon for likes, and a three-dot menu icon.

TSP AD
@tsp_ad
تم انشاء هذا الحساب لاغراض البحث العلمي في دراسة الظواهر الاجتماعيه.
Joined November 2014

TWEETS 42 FOLLOWING 26 FOLLOWERS 426 LIKES 4

Tweets Tweets & replies

TSP AD @tsp_ad · 7 Sep 2015
٢. تفاعل وشارك معنا وسوف نحفظ لك الخصوصيه والسريه التامه.

TSP AD @tsp_ad · 7 Sep 2015
١. قد يرى البعض الكثير من الامور والظواهر الغير مرغوب فيها وقد يتغاضا عنها لعدم الرغبه في الدخول الى مراكز الشرطه والابلاغ عنها.

TSP AD @tsp_ad · 7 Sep 2015
شاركنا معنا بالظواهر التي تراها تسبب لك الازعاج والقلق وسنقوم معاً بالتعامل معها ووضع الحلول المناسبه.

TSP AD @tsp_ad · 1 Aug 2015
ن آمن واستقرار الاحياء السكنيه يكمن في تكاتف وترابط سكانها وعدم السماح لأي نوع من انواع ظواهر يعيق هذا الاستقرار. شاركنا مقترحاتك وأرائك.

Figure B.1: Twitter account showing tweets and replies in Arabic

Home Moments Notifications Messages Search Twitter

TSP AD @tsp_ad

TWEETS	FOLLOWING	FOLLOWERS	LIKES	MOMENTS
42	26	424	2	0

الظواهر يعيق هذا الاستقرار. شاركنا مقترحاتك وارناك.

TSP AD @tsp_ad · 23 Jul 2015
من الظواهر التي تؤثر على هدوء واستقرار المجتمع التجمعات بعد منتصف الليل والإزعاج في الأحياء السكنية.

TSP AD @tsp_ad · 22 Jul 2015
السلام عليكم ورحمة الله وبركاته. عدنا الى التواصل من جديد معكم في ما يخص الظواهر والمشكلات التي تزعجكم وتزعج المجتمع من حولكم.

TSP AD @tsp_ad · 30 Mar 2015
التجمعات بعد منتصف الليل في الأحياء السكنية ظاهرة لها آثار سلبية على أبناء المجتمع.

TSP AD @tsp_ad · 27 Mar 2015
الكاتبه على الجدران ظاهرة تشوه المنظر العام للمرافق العامه وتسبب اللوجه الحظاري لمدينة ابوظبي.

Figure B.2: Tweets continued

TSP AD @tsp_ad

تكثر التجمعات بعد منتصف الليل في الاحياء السكنيه في عطلة نهاية الأسبوع وتسبب هذه الظاهره ازعاج وقلق لدى السكان. شاركنا رأيك للحد منها.

View translation

RETWEETS 2 LIKE 1

3:16 PM - 26 Mar 2015

Reply to @tsp_ad

Figure B.3: Topic related to the issue of crowd assembly in residential areas after midnight



Figure B.4: Researcher's replies to people's contributions



TSP AD

@tsp_ad

التجمعات بعد منتصف الليل في الأحياء السكنيه ظاهره لها آثار
سلبيه على أبناء المجتمع.

Translate from Arabic

RETWEET

1

LIKE

1



1:51 PM - 30 Mar 2015



1



1



1



Reply to @tsp_ad



ahmed yousef abdulla @remariam · 31 Mar 2015

@tsp_ad توعية المجتمع الى ضروره احترام خصوصيه الناس و ايجاد بدائل مفيده

Translate from Arabic



Figure B.5: Users' replies on the topic related to the issue of crowd assembly in residential areas after midnight



TSP AD

@tsp_ad

من احد انواع الإزعاج في الأحياء السكنيه التجمعات بعد منتصف الليل. فنعمل معا للحد من هذه الظاهره.
#الازعاج_في_الاحياء_السكنيه

Translate from Arabic

RETWEETS
2

LIKES
2



11:07 PM - 15 Mar 2015

5

2

2



Reply to @tsp_ad



@ALshamisi1505 بو مبارك · 16 Mar 2015

@tsp_ad علينا ان نعزز مفهوم الامن بين هؤلاء الاشخاص الذين يتجمعون اخر الليل و ان نربط امن دولتنا من خلال الالتزام بقوانين الشرطة و الامن

Translate from Arabic



@ALshamisi1505 بو مبارك · 16 Mar 2015

@tsp_ad كذلك يمكن ان يكون للاعلام الامني دور من خلال انتاج بعض المقاطع سواء صوتية او مرئية و نشرها بين الحين و الاخر

Translate from Arabic



@ALshamisi1505 بو مبارك · 16 Mar 2015

@tsp_ad من المقترحات هو ان تقوم الشرطة المجتمعيه بنشر التوعيه الميدانيه بين افراد الحي من خلال الاجتماعات مع كبار السن في الحي

Figure B.6: Users' replies continued



TSP AD

@tsp_ad

تكثر التجمعات بعد منتصف الليل في الاحياء السكنيه في عطلة
نهاية الأسبوع وتسبب هذه الظاهره ازعاج و قلق لدى السكان.
فماهي الحلول المناسبه برأيك

Translate from Arabic

RETWEETS
2

LIKE
1



2:26 PM - 5 Mar 2015



4



2



1



Reply to @tsp_ad



abdulla hamad @kbi55 · 16 Mar 2015

@tsp_ad ٣ دراسة بند قانوني لهذي الفئه بما تراه الشرطه مناسب للحد من هذي الظاهره ويطبق بعد التعهد

Translate from Arabic



1



TSP AD @tsp_ad · 17 Mar 2015

@kbi55 شكرًا على المشاركة ولاكن هل تعتقد التثقيف يعد من الطرق البديلة للتعامل بالانظمه والقوانين.

Translate from Arabic



1



abdulla hamad @kbi55 · 17 Mar 2015

@tsp_ad من وجهة نظري ان التثقيف هيه وسيله لكي لا تجعل عذر مستقبلي في حال وضع قانون للحد من هذي الظاهره

Translate from Arabic

Figure B.7: Users' replies continued



Figure B.8: Users' replies continued



TSP AD

@tsp_ad

الازعاج في الاحياء السكنيه يثير قلق الكبار والصغار. تفاعلك معنا يساعد في القضاء على هذه الظاهره.
#الازعاج_في_الاحياء_السكنيه

Translate from Arabic

RETWEETS

4

LIKE

1



4:03 PM - 23 Feb 2015

10

4

1



Reply to @tsp_ad



@saeedalshaibli عاشق الوطن · 24 Feb 2015

Adp_Community@ هذه الظاهره قديمه ولا زالنا نعاني منها فيجب و وضع مخالقات رادعه اكثر وايقاف جميع المحلات التي تقوم بتركيب دباب الصوت

Translate from Arabic

1



TSP AD @tsp_ad · 24 Feb 2015

@saeedalshaibli شكراً للمشاركة وسوف تأخذ ملاحظتك بعين الاعتبار بعد دراسة جميع الحلول المطروحه من قبل الجمهور.

Translate from Arabic



1

Figure B.9: Users' replies on the topic related to the impact of crowd assembly on elder and younger people



Figure B.10: Users' replies continued



Figure B.11: Users' replies continued

-  **saif Alkhaili** @bel_hawash · 23 Feb 2015 ⌵
Adp_Community@ لتفادي هذه الظواهر يجب على الاباء متابعة الابناء وملاحظة تصرفاتهم
- [🌐 Translate from Arabic](#)
- [↩](#) [↻](#) [❤](#)
-
-  **UAE** @alkhaili_buti · 23 Feb 2015 ⌵
Adp_Community@ توعية جيل الشباب بعدم الإزعاج في الأحياء السكنية
- [🌐 Translate from Arabic](#)
- [↩](#) [↻](#) [❤](#)
-
-  **salem** @alketbi1005 · 2 Mar 2015 ⌵
Adp_Community@ هذه اساليب غير حضارية ونحتاج للتكيف ونشر الوعي بالسلبيات المترتبة على هذه الظاهرة

Figure B.12: Users' replies continued