An investigation into the four stages of adoption of social media by governments

Kieran Leo Ryan

Declaration

I declare that the work detailed in this dissertation is, except where otherwise stated, entirely my own work, and has not been submitted as an exercise for a degree at this or any other university.

I further declare that this research has been carried out in full compliance with the ethical research requirements of the School of Computer Science and Statistics, Trinity College Dublin.

Signed: _____

Kieran Ryan

31st August 2017

Permission to lend

I agree that the School of Computer Science and Statistics, Trinity College may lend or copy this dissertation upon request.

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Kieran Ryan

31st August 2017

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Abstract

Social media, in its current form has existed since the dawn of the World Wide Web in the early 1990s. Since then, the usage of social media has increased steadily with one social media site (Facebook) now being the most visited website on the Internet.

Since its inception, social media has had a huge impact on society and has played a large part in numerous popular movements such as the 'occupy' movement and the 'Arab spring' uprisings. Government's response to social media has varied, with some governments adopting a laissez faire attitude, other governments adopting a more stern approach limiting access to social media and other governments appearing to use social media to further their own agenda outside of their borders.

This research aims to find out if it is possible to categorise different types of governments in terms of their level of democracy and their response to social media. This was accomplished in two ways. Firstly by reviewing various democracy indices and secondly by using a mixed methods research approach and semi structured interviews to gain insight from citizens from different countries and their perception of their government's response to social media in terms of content monitoring and censorship.

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List of Tables and Diagrams

Abbreviations

TCP/IP	Transport Connect Protocol / Internet Protocol
DNS	Domain Naming Services
SORM	System of Operative-Investigative Measures
ISP	Internet Service Provider
PDP	Packet Data Protocol
GGSN	Gateway GPRS Support Node
GPRS	General Packet Radio Services
SGSN	Serving GPRS Support Node
IMEI	International Mobile Equipment Identity
IPR	Intellectual property rights
NAT	Networkd address translating

1 Introduction

1.1 Background and Context

Compared to the older forms of media such as print, radio and television, social media as it is known today is relatively modern, however its adoption by society and its reach throughout society are phenomenal. As newspaper circulation and evening news viewership on television continue to decline (Ahlers, 2006), the number of social media users continues to grow and is projected to grow to 3.02 Billion users in 2021 (Statista, 2017a). Social media has truly become pervasive throughout society. Any media form that has this level of reach in society where citizens can express opinions freely will eventually come to the attention of the authorities. This research aims to investigate different government's reactions to social media and to see if there is a relationship between the government type and their reaction to social media. The following sections will give background to social media, how government have reacted to social media and a review of different democratic indices.

1.1.1 Social Media

The research carried out in this dissertation is an investigation into how different types of governments from full democracies to authoritarian regimes react to social media and if it is possible to broadly arrange government's response into a number of distinct and clearly delineated categories.

The Collins English dictionary (Collins, 2007) defines social media as:

"Websites and applications that enable users to create and share content or to participate in social networking"

This definition places social media's birth in the 1960s as this was when email starting being used (Tanenbaum, 2011). MUDs (Multi User Dungeon online games) that allowed people to chat in a primitive fashion online have been available since the mid 1970s (Bartle, 1990). Bulletins boards, which allowed people to log on were devised in the late 1970s and were popular in the 1980s and early 1990s. At their height there was over 60,000 active bulletin boards in the United States alone (Barber, 2011).

However it wasn't until Tim Berners Lee started the World Wide Web as we know it today with the advent of hypertext in 1991 (Standage, 2013), followed by the release of the Mosaic browser (Tanenbaum, 2011) two years later that social media as it is recognised today was born. This type of browser with mixed images and text made the information

on the web easily accessible to members of the public, that is, if they had access to a computer and a network connection. It didn't take long for social media sites as they are known today to start appearing. Social media sites such as 'six degrees of separation' and Friendster appeared quickly and disappeared not long afterwards. Others such as MySpace, LinkedIn and last.fm survived longer, with LinkedIn thriving to this day.

Web 2.0, although not an official standard in technology or applications, popularised the concept of website usability and made the web more accessible to general users. Alexander and Levine (2008) credit Tim O'Reilly with coining the phrase Web 2.0 in 2004, but DiNucci (1999) had already mentioned the concept in 1999. Web 2.0 was aimed at making the web more accessible to users as well as making the sharing of user-generated content much easier for the public. This was the perfect platform for social media sites to grown on. In 2006 55% of online American teens used social media, by 2008 this figure had climbed to 65% and to by 2009 74% of online American teens used social media regularly (Lenhart et al., 2010). By May 2010 a single social media site, Facebook was the most visited site in the world (Edosomwan et al., 2011). Kaplan and Haenlein (2010) coined the term 'Screenagers' to represent the new generation of technically savvy young adults who spent a lot of their free time online.

Given how widespread and available social media was, it didn't take long for the military and terrorist organisations to take interest. In the 2006 Lebanese war, Hezbollah used social media to disseminate pictures and videos from the war in order to limit Israel's options and create a perception of failure for the Israeli army. After 4 weeks of fighting a ceasefire was declared but Hezbollah declared victory over Israel (Mayfield III, 2011). The Israeli army changed their approach to social media very quickly and by the time of the Gaza war in 2008 they were using social media and Israeli online communities to set the perception of the war (Mayfield III, 2011). The government of the People's Republic of China grasped the concept of social media very early and were quick to firstly limit access to it through the great firewall of China (Zheng, 2013) and then utilise social media for their own purposes, including having an information strategy that included "information weaponisation and military social media strategy" Raska (2015).

1.1.2 Government reaction to social media

This research involves investigating and categorising how different types of governments react to and in some cases adopt social media. According to the United Nations as of May 2017 there are 196 countries in the world, including Taiwan and two countries that have permanent observer status in the U.N namely Palestine and the Vatican (UN, 2017). This doesn't include areas that are under the control of other countries, for instance the Falklands falling under the United Kingdom's governance. Of the 196 countries that the

United Nations recognise, there are various types of government structures ranging from full democracy, where the country has a free press, holds regular elections, civil servants are free to implement government policies, to authoritarian regimes where the country is ruled in a despotic fashion with little to no free press and pre-decided election results.

1.1.3 Democratic indices

The aim of this research is to investigate whether it is possible to categorise the response of different types of governments to social media and to broadly group the different type of governments that govern in the world today. To do this, different democracy indices were examined such as:

1) Democracy index, produced by the Economist group based in London (Economist, 2017)
2) Democracy ranking index, produced by the Democracy Ranking Association in Vienna (DemocracyRanking, 2016)

These rankings and indices are built using different criteria, which will be covered in more detail in the literature review and in the results chapter.

From these, a broad categorisation of different types of governments was generated; these are listed in Table 1.

1) Full democracy
2) Flawed democracy
3) Hybrid democracy
4) Authoritarian regime

Table 1 The different types of governments

More details on these different types of regimes will be given in the results chapter.

1.2 Government categorisations

Hilberg (1985) in his seminal work of the holocaust devised a series of steps that governments follow in mass murder called the 'six stages of mass murder'. These stages are:

1. Definition (Citizens are defined in law as 'others')
2. Isolation (Citizens are isolated from society)
3. Emigration (Citizens are encouraged to leave)
4. Ghettoisation (Citizens are forced to live together)

5. Deportation (Citizens are forced to leave)
6. Mass murder (Citizens are slaughtered en masse)

This research, whilst not dealing with such a gruesome topic, aims to determine if there is a similar type of categorisation in how governments deal with social media.

1.3 **Research Question**

The purpose of this research is to investigate whether it is possible to categorise the adoption of social media by governments into distinct categories. The research question will address whether it is possible through research in academic papers, publications, news articles and interviewing citizens of various types of democracies to categorise the response of governments to social media into a number of separate and distinct categories.

The first step in the scientific method is observation. In the case of this research the initial observations were carried out on government responses to social media in countries that were affected by the Arab Spring. This included but was not limited to Tunisia, Libya, Egypt, Syria, Bahrain and Yemen.

A pattern was noticed on how some of the authoritarian regimes responded to the use of social media in the popular uprisings. In Tunisia the government tried to hack every Facebook account (Maréchal, 2017, Madrigal, 2011). In Egypt Mubarak ordered the shutdown of the Internet and in Syria, there was a sudden and large increase in the number of sites being blocked, coinciding with the start of the Arab Spring (Al-Saqaf, 2016). From the review of these countries coupled with the results of reviewing North Korea (Zeller, 2006) and Azerbaijan's response to social media (Pearce and Kendzior, 2012) a preliminary category of 'Locked down social media' was proposed.

Syria blocks access to a number of external social media sites such as Facebook and Blogger (Al-Saqaf, 2016). The observation phase of the research coincided with the end of the 2016 American Presidential election and the beginning of the outcry over Russia's use of social media to affect the outcome of the election. Calabresi (2017). Deibert (2013) and Walker (2016) have also reported on China's activities overseas in unauthorised access and the use of social media in other countries. Both of these examples point towards a government having a deep understanding of the impact of social media. Further research on China provided the basis for another proposed category – "Heavy government restrictions". China blocks Facebook and Twitter but allows local equivalents to flourish. The local equivalents – Sina weibo for Twitter and Renren for Facebook are government controlled and heavily monitored (King et al., 2013).

The government in the United Kingdom announced in 2015 that it was going to pay companies to monitor citizens on social media (Collins, 2015) and the authorities in the USA have been monitoring most if not all Internet traffic for some time (Arthur, 2013) . From these two examples, another preliminary category of "Semi free social media" was proposed to include countries where there is free access to social media, but it is monitored extensively for government intelligence purposes.

A final proposed category covers other countries where there is minimal censorship or content monitoring, everyone has the right of freedom of expression and if content monitoring does happen it is strictly for security reasons such as anti terrorism and intellectual property rights (IPR) protection. This category is provisionally named "Free social media".

1.4 **Research Interest and Beneficiaries**

This research will be of interest to any person who has an interest on the impact of technology on civilisation. In the space of a few decades social media has gone from an engineer's toy to a technology linking billions of users across the world. Social media has gone from a novelty to a technology that is now pervasive throughout society. In 2017 2.46 billion people use social media and it is reckoned by 2021 that total will be up to 3.02 billion (Statista, 2017a). Any technology this widespread will have an impact of the citizens of any country. This research will touch on that impact through detailing how governments react to social media.

1.5 **The Scope and Boundaries of the Research**

This research will be limited to popular social media so it will be limited to the last twenty-five years or so.

Interviews were carried out with citizens from full democracies, flawed democracies and hybrid democracies. Although potential candidates had been identified from authoritarian regimes such as China, Russia, Iran and other countries in the Middle East, it was decided not to interview citizens from these authoritarian regimes after comments from the ethics committee on grounds of security and ensuring personal safety of the interviewees. All research on authoritarian regimes is based on secondary research and the sources will be clearly referenced. Given the breadth of countries in each category, only a representative sample of countries from each potential category had a representative interviewed.

1.6 Timeframe of study

The research proposal was agreed on the 28th November 2016. An academic supervisor was assigned in January 2017 and the approach to the project was agreed in March 2017. This was quickly followed by an application to the ethics committee to proceed with interviewing potential candidates. Ethics approval was granted in June 2017 with the candidate interviews following thereafter, as laid out in detail in Figure 1.

Task Name	Duration	Start	Finish
Thesis	219d	31/10/16	31/08/17
Revised Proposal	0	28/11/16	28/11/16
Supervisor assigned	0	16/12/16	16/12/16
Agree project approach	60d	16/12/16	09/03/17
Project preliminary work	43d	10/03/17	09/05/17
Literature review	150d	28/11/16	23/06/17
Ethical Approval	22d	09/05/17	08/06/17
Submit Ethics application	0	09/05/17	09/05/17
Receive feedback	3d	10/05/17	12/05/17
Re-submit	9d	26/05/17	07/06/17
Receive feedback	1d	08/06/17	08/06/17
Re-submit	1d	08/06/17	08/06/17
Ethics committee approval	0	08/06/17	08/06/17
Interviews	51d	08/06/17	17/08/17
Interviews x 19	40d	08/06/17	02/08/17
Code results	2d	03/08/17	04/08/17
Draft production	50d	09/06/17	17/08/17
First draft	0	17/08/17	17/08/17
Proof reading / Binding	10d	18/08/17	01/09/17
Final proof read	5d	18/08/17	24/08/17
Corrections	3d	25/08/17	29/08/17
Final Draft	1d	30/08/17	30/08/17
Bind	1d	31/08/17	31/08/17
submission	0	01/09/17	01/09/17

Figure 1 Timeframe of research

1.7 Chapter Structure

This dissertation is structured as follows:

Chapter 1: Introduction

This chapter introduces the research questions and the background behind them.

It outlines who will benefit from the research, the scope of the research and the boundaries of the research.

Chapter 2: Literature Review

This chapter provides an overview of the relevant literature relating to the research question. This literature comes from books, academic papers, scientific articles and trade articles. The literature review will cover all aspects of social media and how governments respond to it and utilise it.

Chapter 3: Research Methodology and Fieldwork

This chapter provides a concise overview of the research philosophies, methodologies and strategies available to the researcher. This chapter also provides the explanation for choosing the particular research methodology for these research questions. Finally the merits and limitations of this particular research methodology for this research question will be reviewed.

Chapter 4: Research findings and Analysis

This chapter details the primary data obtained from the interviews and the secondary data from research. The findings of the research will be revealed and these findings will be analysed in the context of the literature review.

Chapter 5: Conclusions

This chapter concludes the research by reviewing the results of the interviews and secondary research and determining whether the data collected has answered the research question. This chapter also contains recommendations for future research areas in the field.

2   Literature Review

2.1   Introduction

The aim of this literature review is to examine and critically analyse the body of published work, be that books, academic research and newspaper articles that cover the topics of social media, content monitoring, censorship and to a lesser extent the different forms of governments that exist.

This literature review will cover four topics:
1) Background and history of social media
2) Politicisation of social media
3) How governments react to social media
4) Different forms of governments, from full democracies to authoritarian regimes & the different democracy indices

2.2   Background

2.2.1   History of Social Media

Social Media is defined by the Collins dictionary (Collins, 2007) as follows:
"Social media refers to websites and computer programs that make communication possible with the use of computers or mobile phones"

Standage (2013) in his history of social media goes back before the age of computers and discusses how the Romans communicated with each other using a single letter than was read by one person to many, a primitive form of social media. When Cicero left Rome in 51 B.C. to be the proconsul of Turkey he maintained communication with friends via letters that were addressed to many individuals, commented on and annotated by others. Fang (1997) breaks down the history of mass communications into six separate and distinct revolutions from the start of writing, through Guttenberg to the modern day. Curiously, each of the distinct revolutions have a number of characteristics in common, one being the spread of media production from many independent thoughts, leading to de-centering and fragmentation, with an expansion of points of views and experience. These characteristics sit easily on modern social media. The previous dry definition of social media does cover the basic element of social media, but a more fitting and detailed definition has been supplied by Ellison (2007):

1. Construct a public or semi-public profile within a bounded system
2. Articulate a list of other users with whom they share a connection

3. View and traverse their list of connections and those made by others within the system.

Using the first definition above, modern social media began around the advent of email on mainframes in the 1960s, through the online games of the 1970s and 1980s to the bulletin boards of the late 1980s and 1990s (Shah, 2016b). With the release of the Mosaic browser in 1993 (Vetter et al., 1994) which combined pictures, text, audio and even video clips. The Internet was put within the reach of everyday consumers, albeit if they could afford a home computer, modem and subscription to an (ISP) Internet Service Provider. Messenger services followed quickly with AOL applying for a patent on instant messaging in 1997, which they got in 2002 (Hu, 2002). The first major site to start linking users together and suggesting friends was sixdegrees.com, based on the game of six degrees of separation from the actor Kevin Bacon.

If the first few years of the Internet, loosely referred to as Web 1.0 which was about connecting computers to networks then Web 2.0 was about connecting users to each other via well-architected web sites. Web 2.0, which does not refer to any particular RFC or standard but more to the way websites are designed to make them more user friendly and accessible was first mentioned by DiNucci (1999) and was the next major step forward in the proliferation of social media sites. Web 2.0 promoted the sharing of information and social networking. Van Dijck (2013) refers to the interactivity and participatory nature of Web 2.0 that promotes two-way communication rather the one-way communication paradigm that was analogous with Web 1.0.

Web 2.0 laid the foundation for social media and social networking sites. Figure 2 shows a summary of the proliferation of social media sites after the advent of Web 2.0 in the early 2000s.
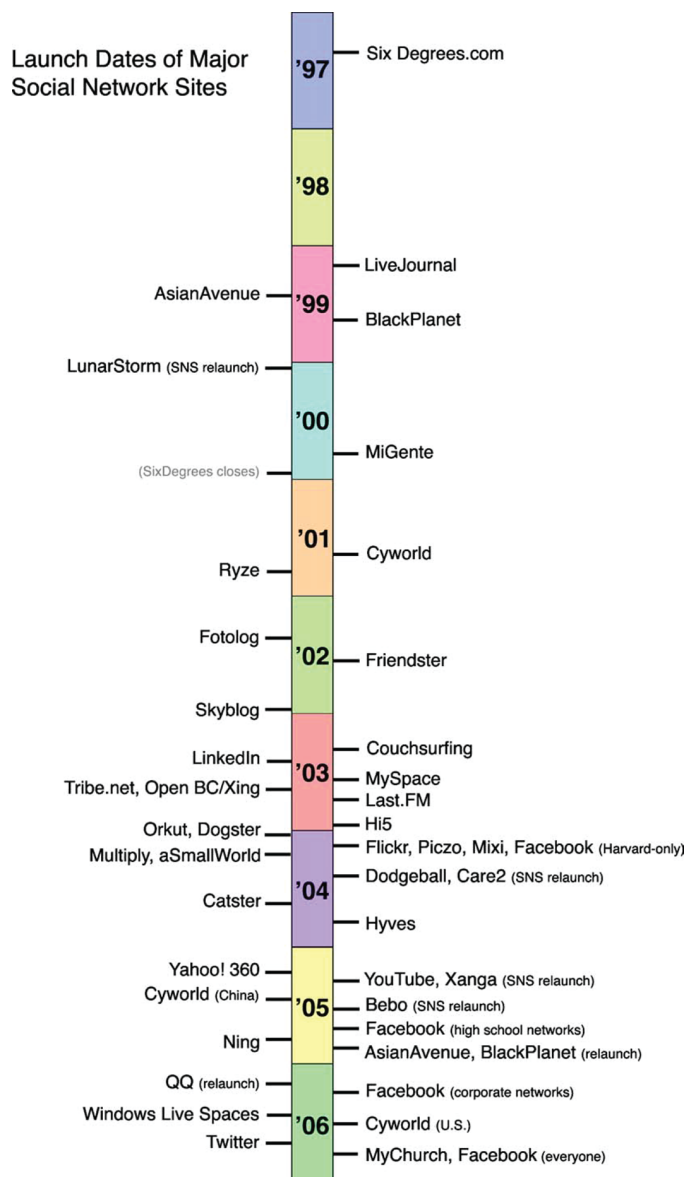
Figure 2 History of social media sites to 2007. Source taken from Ellison (2007)

By 2003 the number of social media sites being launched had reached such a level that one social media analyst, Clay Shirky coined the phrase YASNS, "Yet Another Social Networking Service." (Shah, 2016a).

Many of the original social media sites didn't last too long and a large number fell by the wayside, 6degrees of separation, Friendster, Bebo and Myspace all have closed. However, for each one that closed more opened and the number of users of social media has grown steadily. According to data made available from Statista (2017b) by the end of 2017 it is reckoned that over a quarter of the world's population will be using social media in one form or another, see Figure 3 for more details.
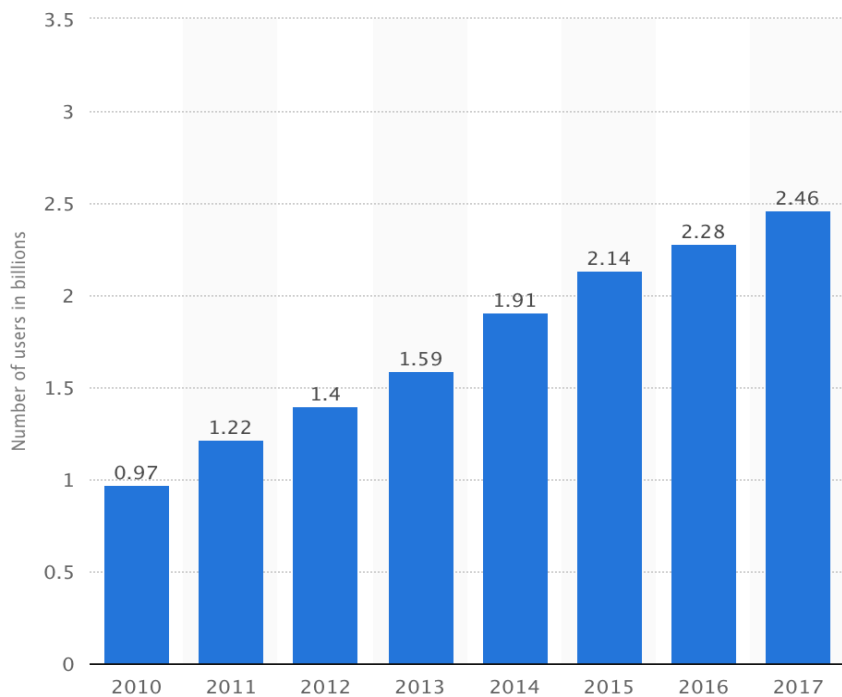
Figure 3 Number of social media users worldwide. Source taken from Statista (2017a)

2.3   Politicisation of Social Media

Even before the advent of social media, the potential impact of new technologies on social movements had been noted, Bryan et al. (1998) mentioned the term 'Electronic Democracy' and the effects new technologies could have on democracy, even going back as far as the potential impact of television and radio stations in the 1960s before moving to new technologies available in late 1990s. Starting in the early 2000s, technology and social media started to have an impact on politics.

2.3.1   Ukraine

In 2004, during a presidential election where the initial results were contested, protestors for the first time used the Internet and mobile phones to spread news and organise protest meetings. The original elections results were overturned as a result of the protests (Lange, 2014).

2.3.2   India

Possibly the first major incident that brought social media to the attention of the world was the Indian terrorism crisis of November 2008 when a number of terrorists took over a few luxury hotels in Mumbai in India. This led to the Twitter service being overwhelmed with traffic from ordinary citizens. Hostages were able to tweet from phones and give the type of coverage to the incident that no news bureau could (Cross, 2011). During the height of

the incident, the Twitter service was getting the then unheard of traffic level of one message per second with the word Mumbai in them (Stelter, 2008).

2.3.3 Iran

After Mahmoud Ahmadinejad disputed re-election in Iran's presidential election on the 12th June 2009 protests broke out almost immediately (Howard, 2010) with the protestors gathering under the banner of the Iranian Green Movement. This particular social uprising is of note as the State department of the United States stepped in and asked Twitter to delay a scheduled maintenance window on the 6th June before the election so that, citizens of Iran could maintain some freedom of speech (Burns and Eltham, 2009).

2.3.4 Tunisia

It didn't take long for the various social media sites to become centres of freedom on expression, especially in countries where freedom of expression was frowned upon or suppressed. Castells (2015) discusses the networked social movements starting in the Arab world where they were met with murderous violence by the incumbent regimes. Aktham Na`issa, a prominent civil rights activist in Syria was quoted in 2005 as saying:

"The Internet is the only way for intellectuals to meet and share ideas in Syria today."
(Zarwan, 2005).

However it wasn't until late 2010 and early 2011 that social media set parts of the world on fire, literally. In Tunisia on 16th December 2010 in protest at his treatment by the police, a street vendor named Mohamed Bouaziz poured petrol over himself and self-immolated. He suffered 90% burns and passed away on the 4th January (Thorne, 2011). This event are what Sandoval-Almazan and Gil-Garcia (2014) describe as a trigger event. These types of trigger events have three main characteristics:

1) They break the status quo of the society in the country in which they happen
2) Citizens immediately organise around the event
3) It is autonomous

In this case, citizens of Tunisia used social media to immediately gather around the event. The video of Mohamed Bouaziz's immolation spread quickly and within the net four weeks there would be 196,000 mentions of 'Tunisian revolution' on Twitter (Browning, 2013). Protestors used SMS to send messages to each other and uploaded protest videos to YouTube, hosted outside Tunisia. They updated constantly on Twitter. One blogger, Shamseddine Abidi posted videos to Facebook which Al Jazeera then started using as news (Howard and Hussain, 2013). The Tunisian government responded by arresting

bloggers, attempting to block access to twitter and dailymotion.com and by trying to hack every single Facebook account in Tunisia. (Madrigal, 2011). The government quickly found itself unable to control the information flow internally and externally.

Mohammed survived the self-immolation but with 90% burns passed away on the 4th January 2011. Zine El Abidine Ben Ali, the president of Tunisia for the previous 23 years fled the country on 14th January 2011, 28 days after Mohammed set himself on fire (Lotan et al., 2011). Social Media as an enabler for political change had arrived.

2.3.5   Egypt and other countries

In June 2010 Khaled Said filmed a group of corrupt policemen dividing the takings of a drug deal. He then posted this video on Facebook (Howard and Hussain, 2013). On the 6th June he was arrested and beaten to death by two detectives (Campbell, 2011). The official cause of death was that he choked attempting to swallow some hashish whilst being arrested. When his brother collected his body from the morgue he took photographs of Khalid's badly beaten body. Shortly after seeing this photograph, an anonymous person set up a Facebook page called "We are all Khalid Said". This page provided a focal point for the simmering anger felt in Egypt. Wael Ghonim, a Google marketing executive, was later found to be the administrator who set up the site (Browning, 2013). His arrest at a later date by the secret Police backfired drawing international attention to the incident.

The revolution in Egypt started in Tahrir Square on the 25th January 2011. Protests gathered momentum for weeks in Tahrir Square and on the 11th of February Mosni Mubarak who had been President for the last 30 years was forced to resign. During the protests, Egyptians used a mix of all social media, including YouTube, twitter, and Facebook, to spread the message. In January 2011 Facebook acquired 600,000 new users in Egypt. It became the most visited website in Egypt during that time period (Aouragh and Alexander, 2011). One activist was quoted by Afshin (2012):

"We use Facebook to schedule the protests, and twitter to coordinate and YouTube to tell the world"

The government tried to respond to this by using thuggery, mass arrests, blocking sites, and even attempting to turn off the Internet. The protestors responded with their own countermeasures, including dialling into foreign ISPs, using satellite phones for internet access - an expensive but viable option (Hussain and Howard, 2013). They also used Fax machines, satellite phones and even used HAM radios. Another novel application

made available at the time was the 'speak to tweet' service (Eltantawy and Wiest, 2011), which allowed users to call a number and leave a verbal message that would then be tweeted. Mubarak resigned in February, 18 days after the first protestors arrived in Tahrir square.

2.4   Summary on Social Media politicisation

In the space of a few years, social media went from being a side note to the traditional media channels to a technology that the United States state department requested to be maintained during elections in the Iranian presidential elections (Burns and Eltham, 2009) up to being a tool that some reporters thought would bring democracy to authoritarian regimes. Unfortunately the changes it has effected haven't been quite as permanent as hoped and most of the regime changes that happened where social media was used as a tool have since reverted back to their old regimes. In an editorial article in 2016 the Economist reported that of all the countries in the Middle East and North Africa, Tunisia was the only one still rated as a democracy (Economist, 2016) and the others had all slipped back to previous types of governments.

2.5   How Governments react to Social Media

Governments have reacted in different ways to Social Media, from the government of Tunisia attempting to hack every Facebook account in the country (Madrigal, 2011), to the great firewall of China (Zittrain and Edelman, 2003) to the government attempting to turn off the Internet in an entire country as Egypt attempt to do during the Arab Spring (Howard et al., 2011).

Social Media initially caught most governments by surprise, Sullivan (2009) discussed how the government in Iran was caught completely off guard by Twitter, however that is no longer the case. By 2013 Iran was going as far as banning Virtual Private Networks (VPNs) that weren't registered with the government (Buckley, 2013).

The Great firewall of China is an umbrella term. It is not a single firewall, it is more of a collection of laws, content filtering, human interception and technologies. The collection of laws and technologies, as a whole has been successful, with Facebook and Twitter banned, the local equivalent, Renren, Sina Weibo (King et al., 2013) are heavily monitored and the content filtering and blocking is effective. There are ways and means around the government restrictions and the restrictions certainly aren't waterproof (Clayton et al., 2006), (Mou et al., 2016). These monitoring and censorship circumvention techniques will be reviewed later in this research.

Mubarak's government in Egypt attempts to turn off the Internet backfired spectacularly. Firstly because it left the Egyptian government totally exposed on the world stage desperately trying to hold on to power and secondly because it didn't really work. The engineers at the ISPs took their time disabling the external facing routers. Technical minded protestors soon starting using dialup foreign ISPs, a new twitter service called 'speak to tweet' was launched to support the protestors and others started to use satellite phones (Hussain and Howard, 2013).

In more democratic countries the response has been different. For most fully democratic countries social media sites are not blocked, citizens can access all social media across any device. Content is not blocked in general; although the operators are obliged to observe for terrorist activities, indecent content, hate speech or racism.

2.6   Content Filtering

Deibert et al. (2010) has described the Internet as a "surveillance ready technology". When a user uses a phone or a laptop to browse a particular website a large audit trail of data is left behind. The Internet runs on TCP/IP (Transport Connect Protocol / Internet Protocol). There are two versions of the IP addressing scheme, IPv4 and IPv6, in use today. The IP protocol ensures that any device connected to the Internet has an unique IP address that doesn't clash with any other IP address. The address pool for IPv4 has run out so entities are having to either having to use NAT (Network Address Translating) or IPv6. The simplified data flow for a typical browsing session is shown in Figure 4.
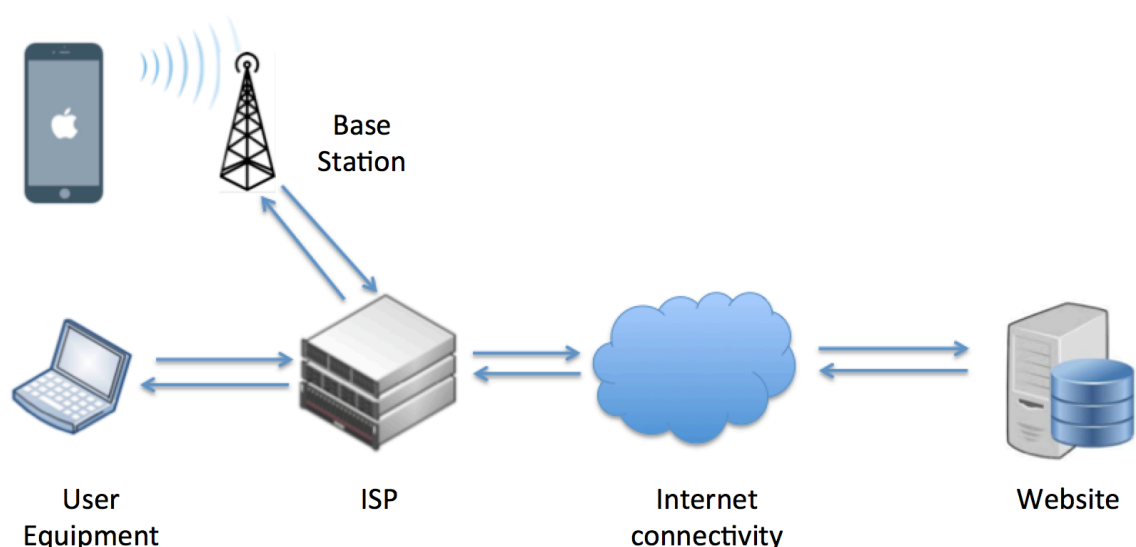
Figure 4 Simplified data flow in typical browsing session

For simplicity, Figure 4. does not show firewalls, network routers or switches. Every entity on the network maintains logs of access, which can be usually be traced back to the user equipment.

If a user is using a mobile phone to connect to the Internet, the following data, at a minimum is tracked and stored:

1. PDP (Packet data Protocol, subscriber's data session information)
2. Base station(s) logs (What base station(s) was the user connected to)
3. GGSN / SGSN logs (GGSN logs keep track of users connecting to Internet from a mobile handset
4. Website logs (Websites will track user activity)
5. Inbound and outbound Firewall logs (all firewalls logs keep ingress and egress logs)
6. Users phone number
7. The IMEI (International Mobile Equipment Identity) of the handset, this is a unique identifier for each handset produced worldwide.

A user connecting to the Internet on their home broadband leaves a similar trail. According to Murdoch and Anderson (2008) and Clayton et al. (2006) there are three main categories of content filtering:

1. Packet inspection
2. Content inspection
3. DNS alteration

2.6.1   TCP/IP Packet inspection and filtering

When a user makes a request to browser a website, the browser deconstructs the request and passes it to the operating system which forms a network request. This request has a header packet and a payload packet. The header contains the networking part of the request. It is this element that gets examined by routers and switches to see where the packet should be forwarded to next. This is where the destination IP address and the port number is stored. For a very simple form of content filtering censorship, all outbound traffic with a particular destination IP address, for example 31.13.91.36 in its packet header could be dropped (Clayton et al., 2006). This would have the net effect of making the site associated with that IP address unavailable throughout a country.

2.6.2 Content inspection and filtering

In content inspection, all network traffic is passed through proxy servers (Al-Saqaf, 2016). These servers examine the traffic for keywords or portions of keywords and if the content filtering software finds the keyword the end user is redirected to an "access denied" page or the portion of the traffic relating to that keyword is not retrieved.

2.6.3 DNS alteration

As IP addresses are hard to remember, DNS servers allow for names to be associated with particular IP addresses. When a users types www.google.ie in the browser, the network layer will use DNS lookup to resolve that name to a particular IP address, in this case 216.58.204.35. It should be noted that many names can resolve to one IP address. DNS altering or tampering in its simplest form is when the DNS servers are configured to not return an IP address for a specific page or to return an IP address leading to an alternate page (Murdoch and Anderson, 2008).

Governments use the above tools in a variety of fashions and rarely on their own. For example the Great firewall of China uses a mix of all three, with some addresses being totally blocked and automatic and manual review of traffic happening (King et al., 2013).

2.7 Censorship

Censorship refers to removing part or all of content in a communication or making the content unavailable. This can take be as simple as making portions or all of websites unavailable to people or having posters removing their posts from social media sites. Censorship is nothing new, according to Newth (2010) the first recorded office of the censor was set up in Rome in 443 BC and Socrates paid the ultimate price for not allowing the censors to censor his work. He was sentenced to death in 399 BC (Fieser, 2008).

The amount of available literature on the subject of social media is large. A quick search on www.google.com/scholar in July 2017 shows that there are 3.88 Million articles available on social media, the same search for articles on mechanical engineering lists 3.87 Million articles. This is an unscientific metric, but it does give an indication, however unscientific of just how much material has been generated on social media in a relatively short period of time. In relation to the impact social media has had on social unrest there is a substantial variance of opinion. Abdulla (2011) is quite emphatic that the revolution will be tweeted, whereas Alterman (2011) is just as sure the revolution won't be tweeted and Comunello and Anzera (2012) ask will the revolution be tweeted at all?

There are numerous social media sceptics such as Malcolm Gladwell, Evegeny Morozov and Rebecca Mckinnon who believe that social media doesn't really change anything on its own,. Morozov is famously quoted as saying "tweets don't overthrow governments, people do" (Morozov, 2010) and then there are the proponents of social media such as Phillip Howard, Clay Shirky and Sean Aday who believe it is possible for social media to change governments. The truth lies somewhere in between, with social media being more of a tool than anything.

2.8 **Different types of governments**

Throughout the world there are many different types of governments ranging from authoritarian regimes to full democracies. Full democracies represent countries where elections are held regularly and are seen to be open and fair, where the civil service are free to enact government policy and where the rule of law ensures the previous characteristics are supported and enforced (O'Donnell, 2004).

On the other hand authoritarian regimes encompassing totalitarian regimes represent regimes where the country is under the country of a single person or party. Elections if they are held at all are widely believed to be not full and fair. Civil rights and the freedom of the press are heavily restricted and the police are used to enforce the government's rules and not to protect the citizens (Linz, 1985). This has been summarised by Linz (1985) when he stated that authoritarian regimes are just simply non-democratic regimes.

In order to create a ranking or categorisation of the type of government, an empirical formula must be used, which will take into account various parameters of the governing regime in that country. This formula, when applied to a number of countries will allow for a ranking system to be generated. For example, DemocracyRanking (2016) suggests the following formula:

Quality of Democracy = (human rights) & (human development)

Whereas Campbell (2008) suggest the following formula:

Quality of Democracy =

(freedom & other characteristics of the political system) & (performance of the non-political dimensions)

2.9   **Categorisations**

2.9.1   Three generation of Content Monitoring and Censorship Tooling

Within the space of online monitoring and censorship, three books 'Access denied' (Deibert et al., 2008), 'Access controlled' (Deibert et al., 2010) and 'Access contested' (Deibert et al., 2012) are probably the most cited literature in the field.

(Deibert et al., 2008) have developed a categorisation for government initiated content monitoring and filtering, which divides content filtering and censorship tools into three separate and distinct classes:

- First Generation content control

  (Defensive posture, blocks access to information from abroad)
- Second generation control

  (Pushing content filtering further into society through laws and regulation)
- Third generation control

  (Offensive controls, this refers to surveillance and targeted espionage)

Deibert's categorisations refer to the effect of the tooling used and not to the output categorisation. There is also the fact that some countries can use all three categorisations, such as China, which uses IP blocking, keyword filtering and extensive laws (Stevenson, 2007) as well as surveillance and espionage. On these grounds this categorisation is not suitable for this research but does provide some interesting information.

2.9.2   Categories of monitoring and filtering

Summarising Deibert et al. (2010) the following categories of content monitoring can be generated:

- Tools: Sites that provide certain tools such as VPNs, Internet hosting, translation and content monitoring circumvention
- Political: Expressions of opinions contrary to government views
- Social: Sites that deal with 'illicit content' such as gambling, pornography and content pirating
- Conflict or security: Sites that deal with armed conflicts or border disputes

2.9.3   Negative and positive trend categorisation

Bitso et al. (2013) reviews censorship in terms of negative and positive trends. The positive trends reflect and increased awareness of Internet censorship, developing knowledge on Internet censorship, how to avoid censorship online and how to raise

awareness within political circles. Negative trends include trends in filtering and censorship and software designed to identify users.

The output of this research is a totality. It is not granulated and not broken down into distinct sub-categories.

Bambauer (2009) proposes a different rating mechanism, which involves rating countries on four metrics:
1) Openness – does the government openly admit to censoring online content?
2) Transparency – Is the government clear on what is being censored and why?
3) Narrowness – Is there independent data to support that the government is only blocking what is says it is blocking?
4) Accountability – Can citizens influence what is being blocked?

This rating, whilst interesting has one large weakness, whilst the government may get full marks for releasing what it is censoring and why, it doesn't mandate the government release any details on what it is monitoring.

2.9.4   Middle Path

In her research on authoritarianism and censorship in China MacKinnon (2010) refers to a concept of "networked authoritarianism", which can be defined as "an authoritarian regime embracing and adjusting to the inevitable changes brought by digital communications technologies". For China this meant implementing large scale monitoring and censorship whilst still allowing citizens to use the Internet and Social Media and express opinions online.

Pearce and Kendzior (2012) have applied the concept of networked authoritarianism to another authoritarian country, Azerbaijan. Whilst doing this, they proposed three categories of monitoring and censorship:
• Open access
• Middle path
• Censorship
The open access category refers to open access to the Internet whilst the censorship category referring to total censorship. The 'middle path' being where a country may laud open Internet access but Internet surveillance is maximised and content is frequently blocked. Users who find themselves on the wrong side of complex information laws will pay severe penalties (SORM in Russia) (Maréchal, 2017). Pearce and Kendzior (2012) noted that most of the countries of the former Soviet Union have adopted the 'middle path' approach.

2.9.5 Acceptable monitoring and censorship

Even in free democratic countries citizens are willing to tolerate some level of legal content monitoring and censorship. Bitso et al. (2013) and Bambauer (2009) have identified the following categories of monitoring and censorship that society deems as acceptable

1. Societal security (Protection from terrorism, criminals)
2. Protection of society (Protection of minors, anti-spam, obscene content, defamation, incitement to hatred)
3. Economic (Pirating, fraud)

2.10 Government's changing response over time

Government's approach to social media has changed over time as social media has matured and become pervasive throughout society. Deibert and Rohozinski (2010) noted that in the heyday of the early Internet in the 1990s, governments took a 'laissez faire' attitude to content on the Internet and monitoring it. However that has since changed as government's have since implemented measure to protect IPR (Intellectual Property Rights). For example, in Ireland in 2013, a high court decision led to an order to ISPs to block access to the Pirate Bay, a notorious torrent site (Healy, 2013). Once the precedence for an action like this is set, it can be used for other motives as well.

In 1995, The government in Russia legislated the "System of Operative-Investigative Measures" (SORM) law (Maréchal, 2017) This law allows the 'Roskomnadzor', the department tasked with overseeing Information, communication and mass media in Russia to block types of content without a warrant. SORM was further enhanced by the passing of the "Bloggers Law" in 2014 forcing all online outlets (including social media sites) with more than 3000 daily pages views to register with the government (Duffy, 2015).

Quality data on monitoring controls and censorship currently implemented in countries is hard to find as Deibert et al. (2010) noted that governments are quite coy in distributing this information. In fact sometimes when the information provided by various content monitoring tools is called into question in open court government agencies drop the case rather than have information about the tool become knowledge. An example in case here is the infamous Stingray, a device that allows tracking of mobile phones (Pell and Soghoian, 2014). In 2015 Patrick (2015) reported that the Federal Bureau of Investigation in the United States dropped cases against three defendants when asked to provide more details on the Stingray.

2.11 Government types

The research question involves investigating if it is possible to categorise the response of various types of governments and their reaction to social media. In order to do this the types of governments need to be empirically categorised. There are a number of different democracy indices available and they mostly follow the same format of calculation as described by Campbell (2008):

Quality of Democracy = Quality of Politics + Quality of Society

The quality of democracy (democracy index) is the sum of the quality of politics (such as the holding of regular and free elections, civil servants free to implement government policy), and the quality of society (availability of civil rights, health, free population).

Of the many democracy indicators, four indices were identified for use in this research and these are laid out in Table 2.

1. Vanhanen's index of democracy
2. Economist's unit democracy Index
3. Global democracy Ranking
4. Polity IV

Table 2 Democracy indices

2.11.1 Vanhanen's index of democracy

Vanhanen's index of democracy is based on the level of population participation and competition within the democratic election process. The most current data for Vanhanen's index is for the period from 1810 to 1998. (Vanhanen, 2000). This research is looking to investigate government's response to social media and given that the use of social media has exploded since the late 1990s this data set is not suitable for use as this research requires a more current dataset and a democracy index based on more than just electoral participation.

2.11.2 The Economist's unit democracy index

This index is produced by the Economist group based in London (Economist, 2017). This index is calculated by using five components – electoral process, functioning government, political participation, political culture and civil liberties. The index is calculated per country and then an overall worldwide ranking is generated. This ranking is then subdivided into categories from full democracy to authoritarian regime. The data in this index is current and was deemed suitable to use for the research. The latest index

"Democracy index 2016 – revenge of the deplorables" is the most current version of data available.

2.11.3 Global Democracy ranking index

The Global Democracy ranking index produced by the Democracy Ranking Association (DemocracyRanking, 2016) in Vienna is another democracy index calculated using weighted factors such as political rights, civil liberties and gender gap, health and environment factors amongst others. It is not a complete data set, there are a number of countries that would rate lower on any democracy index missing from this dataset but the available data is more than enough for this purposes of this research with countries missing from this index marked as such in the results.

2.11.4 Polity IV

The Polity IV data series, like other democracy indexes is built on a summation of components similar to the other indices and rates the countries in terms of autocracies, democracies and anocracies (Marshall et al., 2012). Within the Polity IV democracy rating there are 24 separate components for each country for each year. In the latest version of the Polity IV data there are over 1500 data points for Ireland alone. This makes this democracy index quite complex and beyond the scope of this research.

3   Research Methodology

3.1   Introduction

Research can be defined as the "scientific and systematic search for pertinent information on a specific topic" (Kothari, 2004).

The aim of this research is to test a hypothesis on categorisation of government's responses to social media. In order to do that, a research strategy and methodology must be selected that are appropriate for the topic and research field. There is a large amount of literature on research approaches, methodologies and techniques available. These will be reviewed and a suitable one selected for this research.

3.2   Research Methodologies

Crotty (1998) discusses his four elements approach. These elements being i) methods, ii) methodology, iii) theoretical perspective and iv) epistemology.

Creswell (2014b) proposed his research framework linking philosophies, research methods and designs and research approaches, as illustrated in Figure 5 Creswell's research framework below.
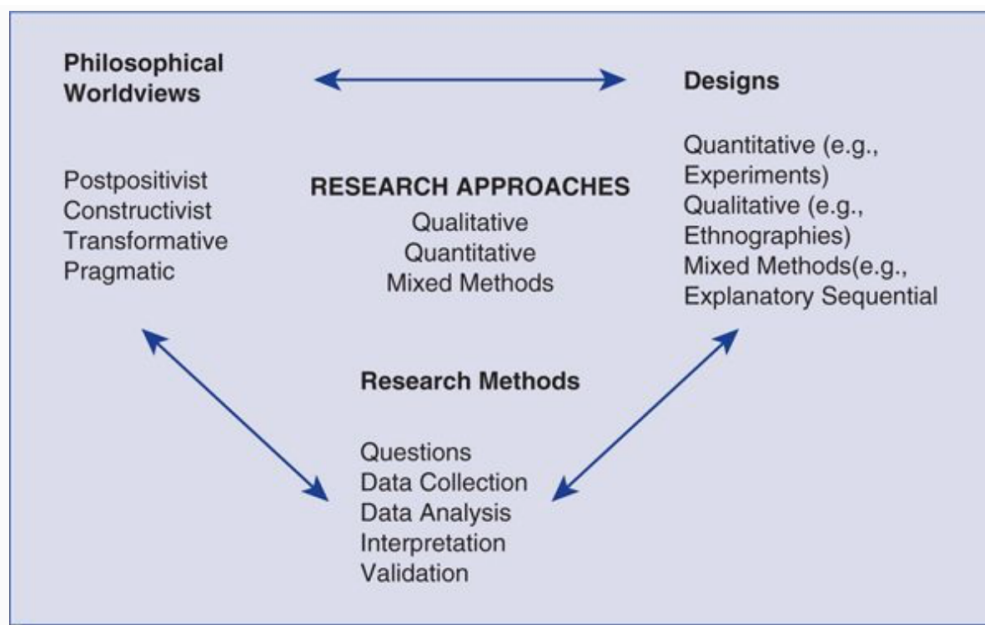
Figure 5 Creswell's research framework, source taken from Creswell (2014b)

Finally, Saunders et al. (2015) have described a 'research onion', which breaks research down into philosophy, approach, methodological choice, strategy, time horizon and techniques and procedures. This is shown in Figure 6.
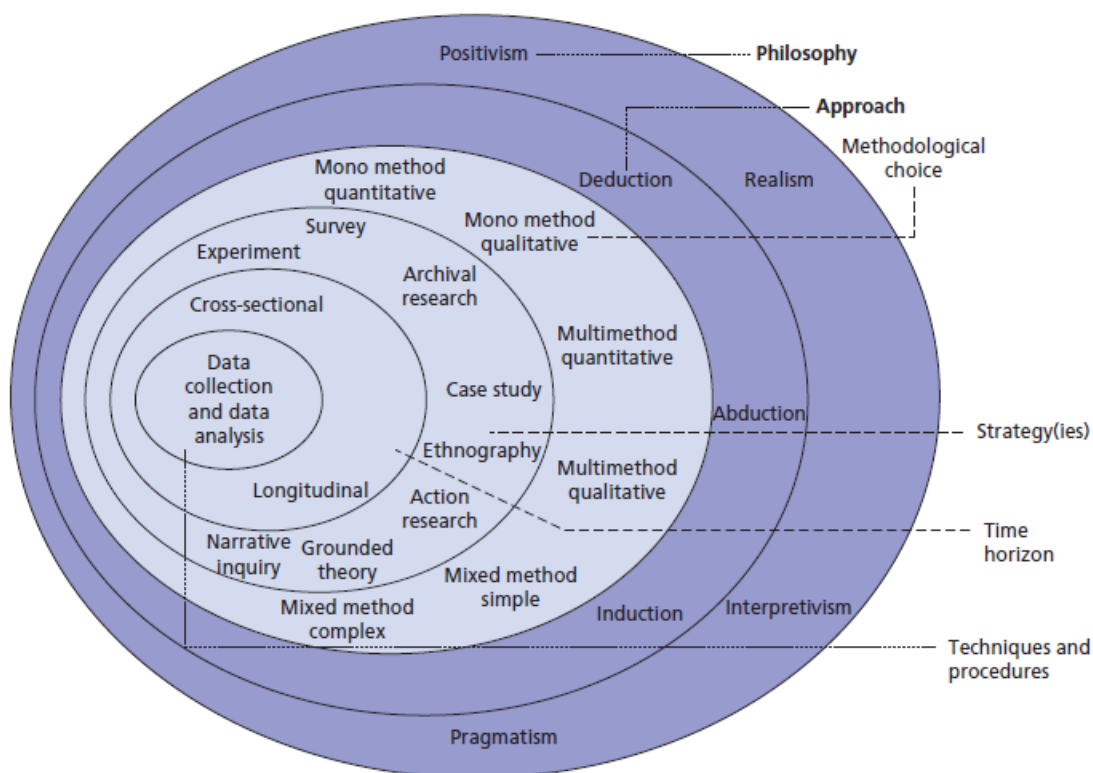
Figure 6 Saunder's research onion, source taken from Saunders et al. (2015)

Regardless of the copious literature on research design and philosophy the main components of any research are:

1) Research philosophy
2) Research approach
3) Research methods
4) Strategy design
5) Data collection / data analysis and interpretation

This chapter will provide an overview of these five topics and will also provide the reasoning behind the selection of the chosen method.

3.3 Purpose of the research

The aim of this research is to investigate how various types of governments respond to social media and to see if it is possible to systematically categorise the different type of governments' responses to social media.

3.4 Ontology

(Creswell, 2014b) refers to ontology as the nature of reality, the relationship between people, the world and society in general. Eriksson and Kovalainen (2016) list the two perspectives of ontology as objectivism and subjectivism. Subjectivism is sometimes referred to as constructionism.

The ontological perspective in this research is wholly subjective; the research questions are based on the interviewee's perspective of what they believe and not really on what they can prove. This aspect is important when it comes to content monitoring, as often it is impossible to prove if a county has employed content monitoring software, so the questions relate to the interviewee perception of the level of content monitoring or censorship in their home country.

3.5 Epistemology

Remler and Van Ryzin (2015) define epistemology as the ways of knowing. There are a number of different types of epistemologies, ranging from radical structuralist to positivism available. For the purpose of this research the four main schools of epistemology popular within technology namely Positivism, Interpretivism, Realism and Pragmatism were reviewed.

Of the four schools, it was decided take a pragmatic philosophical approach as some of the data gathered will be empirical, but a lot of it will be subjective and based upon interviewees versions of events and their own interpretation of government actions and censorship. Pragmatism is probably best suited to helping answering this research question as a mixed method methodology has been chosen, the truth is what the interviewee believes was true at the time and as Creswell (2014b) suggests pragmatism is best suited to research that occurs in a social, political and historical context.

3.6 Research approach

There are two types of research theories pertinent to this research; deductive theory and inductive theory.

3.6.1 Deductive theory

According to Bryman (2015) deductive theory is based on defining a hypothesis built on knowledge of an area and then subjecting this hypothesis to empirical analysis from data gathered in the selected area of research. Once the analysis is complete the hypothesis can be either confirmed or rejected.

3.6.2 Inductive theory

Saunders et al. (2015) define Inductive theory as developing a theory as the data is being collected and analysed. The theory may be modified as more and more data is collected and analysed.

For the research in this project, an inductive theory was used as a research question was generated from knowledge in the subject matter area. This was then to be subjected to analysis from data collection.

3.7 Research Methods

Research methods are techniques and procedures that produce research evidence (Remler and Van Ryzin, 2015). Research methods include how the data is gathered, what population is sampled and techniques for analysing the data such as statistical techniques. There are a number of different methods – namely, quantitative research, qualitative research and mixed methods research.

Quantitative research involves the objective empirical analysis of data collected from participants via surveys or questionnaires. (Creswell, 2014b). Qualitative research is generally more concerned with understanding a phenomenon or a set of events and how participants viewed these phenomena or interacted with them. Qualitative research generally produces non-numerical data, for examples the outputs of interviews (Remler and Van Ryzin, 2015). Mixed methods research involves taking elements from both quantitative and qualitative research. A principle of this type of research is that when the statistical analysis or trends from quantitative data is combined with participant's personal experiences the output will provide more holistic answers to the research questions (Creswell, 2014a) and it is for this reason that a mixed methods approach has been taken for this research. Using a mixed methods research approach the results of the interview coding can be combined with the thematic review to product a richer result.

Mixed methods designs include convergent design, explanatory sequential design and exploratory sequential design. These three types of mixed methods are the primary models. There are others such as transformative, embedded and multiphase mixed methods, but these models are typically used for more advanced mixed methods designs and as such are beyond the scope of this research.

For this research a mixed methods convergent parallel design was chosen. According to Creswell (2014b) this approach is best suited to a project where the research includes collecting both quantitative data and qualitative data and then merging the analyses afterwards. Domínguez and Hollstein (2014) have also put forward the position that frequently better results are achieved by combining research approaches.

For the data set in this this research, qualitative narrative from the interviewees was transcribed and quantitative data was generated via coding of the interview. Using a mixed methods convergent parallel design allowed for the generation of codes for each

interview which could then be used to empirically categorise the interviewee's home country whilst the qualitative data was kept via the theme review. Johnson and Onwuegbuzie (2004) recommend this approach where insight and understanding that either a quantitative or a qualitative approach may miss is necessary. By using the two approaches it is possible to overcome some of the weaknesses inherent in both qualitative and quantitative research approaches. Using the convergent parallel approach also allows for stronger evidence through convergence and corroboration of findings allowing for a stronger and more grounded conclusion.

In this research the participants are interviewed first, and then the interview transcript is coded. This represents the quantitative element of mixed methods in this research. The qualitative element is represented by the thematic review of the interviews notes for repeating themes. As the data for this both qualitative and quantitate research is collected synchronously, this approach is referred to as parallel design. The end result of this approach is that two sets of data, 1) data coding results and 2) Thematic review. Both sets of data can be found in Appendix 1 and 2 respectively. The two outputs will then be compared or related to each other to provide a richer interpretation of the data.

3.8 Research strategy

The research strategy is the plan on how the research question(s) will be answered. Typically a research strategy includes the research objectives, the sample size, the source of the samples and any constraints that may apply. Other factors such as available time and resources may also play a part on the choice of strategy.

There are a number of different research strategies available, Saunders et al. (2003) lists 8 separate types. This research is investigating how citizens view government's reaction to social media and their own experiences with content monitoring. After researching the other strategies it was decided to use a descriptive study approach, as this approach is best suited to describing the characteristics of a population or a phenomenon, in this case how governments respond to social media.

3.9 Data collection and analysis

3.9.1 Time Horizon

There are two types of time horizons – longitudinal and cross sectional. Longitudinal is used for observing the pattern or change of a phenomenon over a period of time. Cross sectional horizons refer more to a snapshot in time (Saunders et al., 2015). As this research is aimed at a participant's understanding of social media and censorship at a

particular point in time, and not over a long period of time, a cross sectional approach was used.

3.9.2   Population and Sampling

This research entails interview citizens from 15 countries. It is impractical to interview all citizens from these countries and as suggested by Saunders et al. (2015) in this situation, sampling provides a valid substitute to interviewing the entire population.

Sample size refers to the number of participants that are required to participate in the research to give a degree of confidence that the results are valid and reliable. Adler and Adler (2012) suggests interviewing until saturation point is reached, this being a point where nothing new is being learned. For the purpose of this research the aim is to select a group of participants who can help understand and answer the phenomenon behind the research question. This can be referred to as purposeful sampling.

As this research involves every country in the world it will prove impossible in the timeframe available to interview a suitable sample or to locate a valid cross section. For a convergent design approach in mixed method sampling, the sampling population for both the qualitative and quantitative sampling will come from the same sample population. Creswell (2014a) asks that even if both methods use the same sampling pool, do all participants from the pool that are quantitatively sample need to undergo qualitative analysis? Given the cost in terms of arranging interview and the time it takes to perform the interview and then collate the data, all participants in the pool were interviewed.

There are two main sampling categories available – probability and non-probability sampling. Probability sampling can be further broken down into simple and complex random, double, cluster and stratified sampling. Non probability sampling can be broken down into snowball, stratified, judgement, purposive and convenience sampling (Remler and Van Ryzin, 2015), (Cooper et al., 2006). Of the different sampling techniques, purposive (judgemental) sampling was used for this research. This approach allowed the lead researcher to pick participants that can help answer the research questions (Saunders et al., 2015). The selection criteria for candidates are laid out in Table 3.

1) Ethics approval to interview the participant
2) Participant lives in or has lived in a particular country for a long period
3) Ages 30 to 50
4) IT literate
5) Willing to be interviewed face to face or over the phone

Table 3 Criteria for interviewee selection

A pool size of 30 candidates was assembled, based on Adler and Adler (2012) suggested size. Ten of these candidates either lived or currently live in countries under authoritarian regimes, these being Russia, China, Saudi Arabia, Qatar and Iran. Given the potential dangers that these participants could face if their opinions were openly linked to criticism of the authoritarian regimes where they live it was decided not to interview them. This reduced the pool to 20. Of the 20, 19 were interviewed with the candidate from Belgium being unavailable on a number of occasions.

3.10 Ethical considerations

As this research initially involved interviewing citizens who have lived or are living under full democracies, hybrid democracies, flawed democracies and authoritarian regimes, a lot of attention was given to ethics in order to safeguard the participants in this study. An ethics application was filled out and submitted to the Ethics committee on the 9th May 2017. Feedback was given and the ethics application was revised and re-submitted two more times. In order to protect potential participants from authoritarian regimes, the application was updated to NOT interview potential participants from these countries but to use secondary data gathered from books, academic journals and other media sources instead. The ethics application was finally approved on 7th June 2017 and is in supplied in Appendix 5. Ethical Approval

3.10.1 Data gathering

There are two types of data that will be collected for this research; primary data from interviews and secondary data from books, reports and articles in professional journals. Contemporary articles from newspapers and online sites will also be used. However the veracity of these articles will be checked as they have a potential to be lopsided in their objectivity.

3.10.2 Interviews
The aim of this research is to investigate the participants' experiences of social media and their impressions on how different governments react and adopt social media.

According to Eriksson and Kovalainen (2008) there are three main types of interviews;
   1) Structured interviews
   2) Semi-structured interviews
   3) Unstructured interviews

Domínguez and Hollstein (2014) suggest a fourth category called informal chats, but that does seem to fall under unstructured interviews.

For this research a semi-structured interview approach was used. Both open and closed questions were included in the questions. Typically a closed question was followed by an open question requesting more information or insight, for example:

Question no.	Question
Q2.a	Have you personally experienced censorship or content monitoring in social media in Country X?
Q2.b	if so, can you furnish further detail on this?

Table 4 Example interview questions

Q2.a is a closed question providing quantitative data and Q2.b is an open question providing qualitative question allowing for the interviewee to provide a more detailed answer.

3.11 **Interview Protocol**

3.11.1 **Pre-Interview**
Once ethical approval was received, potential participants were identified through the lead researchers social circle and professional circle. Through face-to-face or telephone conversations the background to the project was explained to each individual and they were asked would they like to participate in the research by being interviewed. It was explained to each participant that they were going to be asked questions on governments and social media usage in their country of birth or the country in which they lived in. They were not going to be asked about social media in Ireland, excluding the one Irish citizen who was interviewed. When the participant had agreed to being interviewed the interview approval form along with the background information sheet was given to them. No interview was scheduled until the signed approval form was received. Before the actual interview, the lead researcher talked to each participant and went through the background to the project and the format of the interview. Only at this point was the interview scheduled. Eighteen of the interviews were face to face and one was held over the phone.

3.11.2 **Actual interview**
The face-to-face interviews were scheduled in individual meeting rooms. To put the participants at ease the lead researcher went through the format of the interview again

and the proposed duration; roughly forty-five minutes. The participants were informed that the information was going to be recorded by hand and not electronically and that the participants were free to not answer a question and leave at any time if they wanted to. All participants were told that outside of the interview approval form their name would not be recorded or further associated with the project in any way and their identity would be anonymised. If they were to be referred to directly if would be by a name such as "USA_1" or "Croatia_2". All participants were told that that they were entitled to a final copy of the research if they so requested. Cooper et al. (2006) suggests building a rapport with the interview subjects so in order to accomplish that the lead researcher held a brief friendly discussion with each interviewee on their social media habits before the questions started. During the interview if a brief answer was received further probing questions were asked. Examples of probing questions were "could you expand on that?" or "what makes you think that?" (Bryman, 2015). Answer prompting was avoided, as this could potentially lead to interviewer bias.

3.11.3 Recording interview information
During the interview, the interviewees were asked a number of questions in sequential order. For each interview a data sheet with the questions listed along with a text box underneath each question was developed. The answer to each question was recorded in the text box. If the interviewee gave additional information that was pertinent to the research but not to that particular question this data was recorded underneath the question but outside of the text box. At the end of each interview each participant was asked an open question on whether they had other information that may be linked to the research. This was captured as well.

3.12 Problems and limitations of methodology
Every research strategy and approach will have its own limitations. Qualitative research suffers in that the events that the participants are discussing cannot be reproduced and some participants will be more subjective than objective. This section will list the potential issues that are applicable to an inductive theory being testing using mixed methods gathering data from semi-structured interviews.

3.12.1 Mixed Methods research problems

There are a number of potential issues with the approach taken for this research. Semi structured interviews can produce a lot of data and as noted by Punch (2013) the complexity of collected data can lead to failure. This research was no different, with 19 interviews and 27 questions leading to a total of 513 answers. 76 A4 pages of noted were reviewed and coded. To reduce this risk, a number of methods were used.

1) For each question on each interviewee's answer sheet, a lined box was provided, comments from the interviewee relating to the question were put in the box, and comments on the topic but not relating to the question were put under the box

2) When coding the results, only data in the lined box for that question was used

Johnson and Onwuegbuzie (2004) list a number of problems with mixed methods research:

1) Data collection and analysis expensive and is time consuming
2) Difficult to test hypothesis
3) Researcher has to learn multiple research approaches
4) Challenging for a single researcher to carry out both qualitative and quantitative research.

For this research the data collection and analysis was time consuming. It took over 4 hours in total to prepare for each interview, review the project with potential interviewees, hold the interview and code the results afterwards. This is a cost for the dissertation and sufficient time was budgeted for each interview.

A mixed methods research approach can be difficult to test a hypothesis, in this research a set of codes were developed. This allowed for the categories in the hypothesis to have a set of codes defining each one. Once the interviews were coded, it was possible to contrast the interview codes against the category codes.

For any researcher it would be difficult to learn and use multiple research methods. To cater for some of the potential issues arising from this, there was a large break between the first interview and the second interview while the results were coded and both quantitative and qualitative data was analysed for suitability for the research.

3.12.2 Interview issues
There are a number of potential issues that can arise with interviews, namely response error, non-response error and bias issues (Cooper et al., 2006).

Non-response errors occur when some participants who may have valid input do not participate. All individuals that were approached were eventually interviewed, however as no representative from an authoritarian regime could be interviewed due to ethical considerations, this did present a problem. To alleviate this, copious secondary data from various sources on authoritarian regimes were acquired.

3.12.3 Interview bias

Interviewer bias occurs where the behaviour, tone or comments of the interviewer affects the way the interviewee answers the question (Cooper et al., 2006). For example a researcher may be looking for a preconceived response and ask questions in a tone leading towards that. To mitigate for this, the interviews were carried out in an informal fashion and each interview started with a chat and some background to put the interviewees at rest. During the course of the interviews the interviewees body language and tone was observed to see if the interviewees were at ease or getting tense.

Other measures taken to reduce and eliminate bias included:

- Reviewing the interview questions against the research objectives and answers after each interview
- Being fully prepared for the interview in advance, reading back some answers to the interviewee to ensure that their answer was captured correctly
- Asking all questions in calm even voice and giving background to some questions
- Being aware that interview bias can happen.

Bryman (2015) mentions two other forms of interview bias; acquiescence and social desirability bias. Acquiescence bias being where an interviewee agrees or disagrees with all questions. To mitigate against acquiescence bias, a closed question was typically followed by an open questions on the same topic, requiring the interviewee to think and not just answer immediately and to provide a more verbose answer than a simple yes/no. An example of these questions is in Table 5

Question no.	Question
Q1.b.	Are you aware of censorship or content monitoring on these sites or on other social media platforms in Country X?
Q1.c	If you're not directly aware of censorship or content monitoring on these sites do you believe these practises are being carried out in Country X?

Table 5 Questions designed to mitigate for bias

In order to prevent or at least reduce acquiescence bias, the format of the interview was semi formal, with the researcher sitting beside rather than across from each interviewee. Before each question was asked some background to the question was given and due time was taken listening to the response, usually followed by some clarification questions.

To test for acquiescence bias in the interview, one question was repeated but phrased differently, in a negative fashion from the interviewee's initial answer in order to determine if the answer was the same to both questions.

Social desirability bias, being where an interviewee denies social undesirable traits and to claim social desirable traits (Nederhof, 1985) basically means an interviewee supplies answers that they perceive are the desired ones is a common bias. Nederhof (1985) has proposed 7 methods of dealing with social desirability bias. However most of them are not applicable to this research, for example the suggestion by Nederhof (1985) of using a false lie detector to force the interviewee to believe that they are being physiologically monitored to determine if they are lying is ethically highly questionable. The two methods that were used – neutral questions and a variation of randomised response are the most suited actions for this research.

At the start of each interview, each interviewee was informed that the purpose of the research was to investigate the response of various government types to social media and in order to carry out this research. Citizens from various countries were being interviewed. The interviewee was never informed of what category they were being asked to represent.

Neutral questions are questions where there is no social desirable answer immediately obvious. The questions in the interview were phrased so as not to imply any desired answer it was also explained to each interviewee at the beginning of the interview that (regardless of their country of origin) some of the questions wouldn't apply to them.

3.12.4 Sampling bias

Rather than interviewing the entire population, a sample is interviewed and from this sample, inferences are made about the entire population. Remler and Van Ryzin (2015) provide two potential issues with sampling, these being sampling bias and coverage bias.

Sampling bias can be defined as the results from the sample being different from results that would be received from the entire population. Given that this research covers entire countries, one or two interviewees as a sample is nowhere near large enough to be truly representative. The sample used in this research is not truly random or representative of the views of the overall population.

Coverage bias relates to members of the sample group being systematically different from the overall population in such a way that this could influence the results obtained from the

sample group, again given the small sample size for each country this research is prone to coverage bias as well.

Sampling bias and coverage are limitations on this research and given the nature of this work, number of countries and the timelines there are no mitigating steps that can be put in place for them. The impact of both biases on the results will be covered in the conclusion and further work section of this research. Also, given that the sample size per country is one or two interviewees at most, it is impossible to draw generalisations about the entire population with this sample size using qualitative research methods as part of a mixed methods approach using semi structured interviews (Saunders et al., 2015).

3.13 Results validity

The validity of results refers to the authenticity of the results. Validity can be sub-divided into two types namely internal validity and external validity.

3.13.1 Internal validity

Internal validity is the concept of matching the observations and notes taken during the interviews with theories developed during the research (Remler and Van Ryzin, 2015).

3.13.2 External validity

External validity refers to just how far the findings of the research can be generalised across society, if at all (Cooper et al., 2006).

3.14 Strategies used to reinforce validity

Validity needs to be built into the research design from the start. Johnson and Onwuegbuzie (2004) suggest catering for validity from the design phase, listing 12 detailed threats to validity in the research design in in their work and Cooper et al. (2006) lists 7 threats to validity.

In order to maintain results validity Creswell (2014b) provides a list of 8 strategies for maintaining results validity with a suggestion that a combination of the suggested strategies be used. In this research a number of these strategies were utilised, these are reviewed in the following sections.

3.14.1 Results triangulation

Results triangulation involves triangulating the results from the research against other data sources. In this case the results from the interviews were compared with data from other sources such as Onuch (2015), Bambauer (2009), Bekkers et al. (2013) Bergman

(2017) which provided good comparisons for the Ukraine, the United States, The Netherlands and Europe in general, however the seminal work of Deibert et al. (2010) provides a good comparison for most countries.

3.14.2 Member checking / respondent validation

At the end of the interview, the salient notes from the interview were briefly checked with the interviewee for accuracy, minor corrections were made where justified. Also each interviewee was offered an opportunity to review the notes taken from their interview and a chance to update them if necessary and an opportunity to receive feedback on their interview. All 19 interviewees declined.

3.14.3 Bias clarification

This strategy involves clarifying what bias the researcher has already when starting this research. To counter for this bias in this research a period of self-reflection on the part of the researcher was carried out on the preconceived perceptions that the researcher had about the level of censorship and content monitoring in certain countries. This bias was kept in mind when coding the interviews and drafting the conclusions.

3.14.4 Rich description

Maintaining a rich description can add to the validity of the data by sharing a personal experience of content monitoring or censorship to the reader. For example Appendix 3. Thematic review from interviews, lists the finding from each interviewee including a case where an ISP engineer received requests from the government to procure customer data for monitoring. Two other interviewees named particular politicians and their usage of social media and one interviewee witnessing a case of domestic violence disappear after she read it online. Personal experiences like this add to the validity of the data giving a context to the overall research.

3.14.5 Present discrepant information

To preserve the validity of the results, the data that was captured is presented 'as is', even where there were known factual errors presented. An example of this is one interviewee who gave their country a relative low level of content monitoring was unaware of recent 'hate speech' legislation which increases the level on content monitoring and censorship in that particular country substantially (Hargreaves, 2017). However, in order to maintain the validity of the results and the integrity of the research the interviewee's comments were entered into the data as they were reported.

Other recommended strategies for maintaining validity techniques such as peer debriefing, spending prolonged time in the field and using an external auditor weren't used due to time constraints.

3.15 Results reliability

One of the main criteria for success for any piece of research is the results reliability and validity (Bryman, 2015). Guba and Lincoln (1994) use the terms trustworthiness and validity in their work which is fairly equivalent to the criteria used by Bryman (2015). Results reliability and validity can be broken down into two sub categories.

3.15.1 External reliability

External reliability refers to how easy it would be for other researchers to repeat the study and replicate the results (Bryman, 2015).

3.15.2 Internal reliability

Internal reliability refers to having multiple observers agreeing on what is seen and heard during the interview (Bryman, 2015).

3.16 Ensuring reliability in data and results

In order to support external reliability, each interviewee was treated the same, given the same background and asked the same questions. One method that was used was a variation of the test-retest method, this usually involves asking the participants the same questions again at a later date (Remler and Van Ryzin, 2015). The option of re-interviewing the participants wasn't available, so at least one question per interview was asked twice at different stages in the interview, once in a positive fashion and once in a negative fashion, e.g.

Q. Do you believe content monitoring happens in Country X?
Q. So, you don't believe content monitoring happens in Country X?

All interviewees provided the same answer in both cases.

In relation to the repeatability of the results, that is debatable. The circumstances of this research are dynamic and complicated. Different governments get elected; content and censorship policies change and random international incidents affect policies. For example Germany legislating for hate speech after the influx of refugees (Hargreaves, 2017) and The United States moving from being a 'full Democracy' to a 'Flawed Democracy' after the 2016 election campaign (Economist, 2017). There is no way to

cater for this possibility in research design, the best than can be done to cater for it is to be aware of it.

Another method of increasing results credibility and reliability is to ensure that the interviewee is fully prepared for the interview. In this case all interviewees were met before the interview and the format of the interview and the background to it was discussed with them. All interviewees were supplied with an extensive fact sheet and all interviews began with a review of the purpose of the research.

Another factor that can affect the data validity is interview and interviewee bias, these have already been covered in Section 3.12.3.

However a limitation here is with the small pool size. If this research was repeated with the same pool size with a different pool, different results could be achieved. This is a limitation on the results and needs to be taken into account in the conclusions.

Given that there was only one interviewer in this research the only method of supporting internal reliability was to review the results and code them immediately after the interview and then within a week review the notes and the codes for completeness.

3.17 Lessons Learned

There were a number of lessons learned from the research, the most salient ones are listed below.

3.17.1 Interview restrictions

The lack of interview data from citizens from authoritarian regimes affects the quality of the research. It would have really helped the research if these could have been included. For future reference it may be possible to work with the ethics committee to develop an identity protection protocol that would allow citizens from authoritarian regimes to be included in the interview process.

3.17.2 Interviewee pool size

The interviewee pool size is small and limits the quality of the output of the research. Three interviewees from Italy cannot be thought of as completely representative of the entire population, especially as one of them had no social media presence whatsoever on personal privacy grounds. In the same vein, two interviewees from the United States of America cannot statistically represent that county or the opinions of all the citizens. At

best, with 19 interviews covering 15 countries, the output of the research can only be described as indicative.

3.17.3 Interviewee selection

The interviewees were selected based on criteria laid out in section 3.9.2 Population and Sampling. After the interviews were completed and the notes reviewed it was noted that some of the younger interviewees, whilst aware of what censorship was, were not aware that it was happening in their home country. This finding will be noted later in the results but for future purposes, in order to get a broader and more representative view of the population of a country a wider age bracket of interviewees would need to be interviewed.

3.17.4 Mixed Methods research

During this research, a mixed methods approach was chosen. As part of this approach the quantitative data was produced by coding the interviews. This was very time consuming and labour intensive. The data produced by this was valuable to the research, but the production of that data set was manually intensive time consuming. The same data set, or at least a version close to it could probably have been produced by a well-designed questionnaire followed by a shorter interview.

3.18 Summary

This chapter has briefly covered the main research methodologies available and why certain ones were picked for this piece of research, based on the research involving interviewing 19 citizens from 15 different countries and the subjective perspective of how they believe the government of that country deals with social media. Also covered were the interview and the interview procedure. In total 18 of the 19 interviews were face-to-face with one held over a phone call.

4 Research Findings and Analysis

4.1 Introduction

This chapter will give a brief overview of the method of data analysis used for the qualitative and quantitative results obtained from the semi structured interviews. Once this is complete the primary data from the interviews and the secondary data from research will be presented and the results from this will be analysed in the context of the literature review.

A total of nineteen participants from fifteen countries representing three of the four types of governments were interviewed. Following the ethical review it was decided on security and personal safety grounds not to interview any potential participant from any authoritarian regime. The breakdown of the interviewees is shown in Table 6 below.

Category	Country	Participants
Full Democracy	Ireland	1
	France	1
	Germany	1
	Sweden	1
	Netherlands	1
Flawed Democracy	USA	2
	Italy	3
	SA	1
	Croatia	1
	Brazil	1
	Hungary	1
	Greece	1
	Poland	1
Hybrid Regime	Ukraine	1
	Nigeria	2
Authoritarian Regime	China	0
	Russia	0
	North Korea	0
Total		19

Table 6 Breakdown of interviewees by home country

For some countries more than one citizen was interviewed, notably Italy and the United States, where the primary interviewees from these countries were not only not active on social media but they had also taken great efforts to minimise their online presence out of

a sense of personal privacy. These results were not discounted, but in the interests of maintaining parity between the result sets another active social media user from both countries was interviewed.

Data from the 3 authoritarian regimes was gathered from secondary data sources made available from published papers. These sources are references accordingly.

Cooper et al. (2006) suggests a pilot test at the start of the data-gathering phase, so one interview was held in June 2017, with the results and the questions being reviewed afterwards. The output of this was that two questions were too similar so the second question was removed from the list of questions. The interviews followed the same format throughout the process after the first interview. The remaining candidates were interviewed in July and early August 2017. The interviews consisted of eleven main questions, some of which lead on to sub-questions. In total, including sub questions there were twenty-seven questions.

Part of the ethical approval for this research meant that the interviews were not recorded electronically; all the answers to questions were handwritten. Each interview produced four pages of notes. 19 interviews produced 76 pages of handwritten notes. To generate meaningful knowledge from that, the data needs to be reduced to a meaningful size, summarised, reviewed for patterns and examined statistically (Cooper et al., 2006). The method used to achieve this is covered in the next few sections.

For personal security purposes, it was decided not to interview citizens from authoritarian regimes and to gather the data required for this research from secondary data sources. All data collected in this manner will be highlighted as such.

4.2 **Analysis Framework**

The Analysis framework that will be used for this research is based mostly on the approach suggested by Creswell (2014b) , this framework is shown in

Figure 7. This framework, although it may appear linear is generally more interactive.

```
                    ┌──────────┐
                    │ Raw Data │
                    └──────────┘
                         │
                         ▼
        ┌─────────────────────────────┐
        │  Organising and preparation │────────┐
        └─────────────────────────────┘        │
                         │                      │
                         ▼                      │
        ┌─────────────────────────────┐        │
        │    Reading through the data │        │
        └─────────────────────────────┘        │
                         │                      │
                         ▼                      │
        ┌─────────────────────────────┐        │
        │         Data coding         │        │         ┌──────────────────┐
        └─────────────────────────────┘        └────────▶│  Data validation │
             │                  │                         └──────────────────┘
             ▼                  ▼
     ┌──────────┐      ┌──────────────┐
     │  Themes  │      │  Description │
     └──────────┘      └──────────────┘
             │                  │
             ▼                  ▼
        ┌─────────────────────────────┐
        │ Inter relating themes       │
        │ (grounded theory /          │
        │  Case study)                │
        └─────────────────────────────┘
                         │
                         ▼
        ┌─────────────────────────────┐
        │       Interpretation        │──────────┘
        └─────────────────────────────┘
```
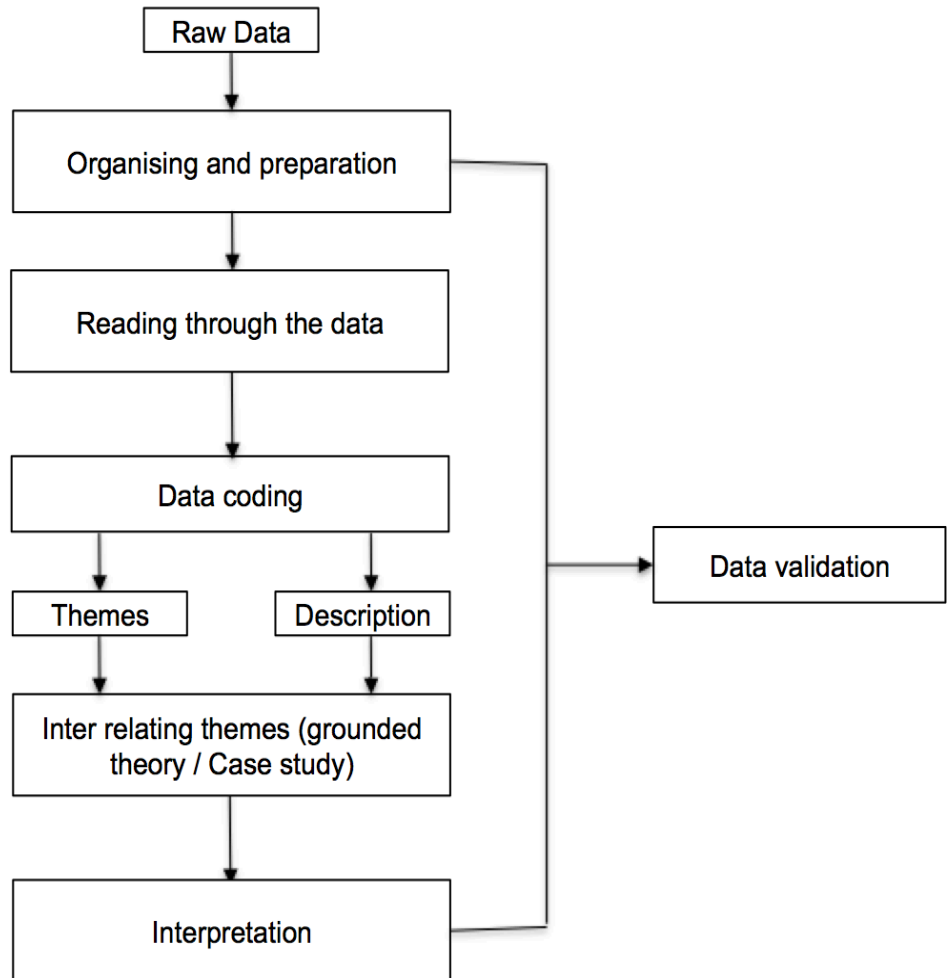
Figure 7 Creswell's analysis framework, source taken from Creswell (2014b)

4.2.1 Preliminary analysis

The first step in this framework is organising the data. In order to do this before each interview an answer book was prepared so that the answers could be recorded systematically during the interview. The second step is to review all the data. During the analysis of this data, all the interview notes were read in their entirety before coding began.

4.2.2 Data coding

Data coding refers to organising data into categories by applying relative codes to it. The purpose of this is to allow for aggregation of all the data into a topic or theme that can then be reviewed individually (Tesch, 1990). This can be accomplished by reviewing the interview notes and when a particular scenario or answer is noted an applicable code can be written beside the answer in the margin.

The hypothesis in this research is concerned with social media in authoritarian regimes so the codes that were developed are mainly concerned with that. During the interview and in the free discussion section at the end of the interview, most of the interviews talked about similar topics loosely related to the hypothesis so codes were developed to support that too.

Cooper et al. (2006) proposes four rules for generating codes, the codes have to be:
1. Appropriate to the research
2. Exhaustive
3. Mutually exclusive
4. Derived from one classification

The codes used in this research followed those rules. Each code is associated with furthering the investigation into the hypothesis i.e. the codes are appropriate to the research. They are exhaustive in that the codes cover the relevant data points and leave no room for a miscellaneous category. The codes are mutually exclusive, each data point can be found in one code only. Finally each code is derived from one single classification based on a single concept. For example the code 'SM_ACC' representing is social media available in that country generates a "yes/no" answer. Other codes are separate but linked together, the codes "Con_aware", "Con_vis", "Con_Conf" refer to the interviewee being aware of the concept of content monitoring, knowing that content monitoring happens in that country and finally can give concrete examples of content monitoring happening in that country help gain a more detailed understanding of the level of content monitoring in that particular country.

During the interviews, two topics came up repeatedly in the free discussion section at the end of the interview that weren't covered in the initial list of codes. These topics were that two of the interviewees did not use social media at all and the proliferation of government originated fake news on social media. To cater for these 'gov_fk_news' and 'sm_usr' were added to the list.

Each interviewee's responses were reviewed and then codified using the codes developed. The results of this coding exercise are in 3 separate tables in Appendix 1. Data coding results.

The developed codes for this research are described and explained in Table 7.

#	Code	Full name	Explanation
1	SM_ACC	Social media access	Social media is accessible in that country
2	Con_aware	Content monitoring aware	Interviewee is aware of content monitoring
3	Con_vis	Content monitoring visible	Interviewee stated that content monitoring was occurring in that country
4	Con_vis_con	Content monitoring confirmed	Interviewee provided examples of content monitoring in that country
5	Cen_aware	Censorship aware	Interviewee is aware of censorship
6	Cen_visible	Censorship visible	Censorship occurs in that country
7	Cen_vis_con	Censorship confirmed	Interviewee provided examples of censorship in that country
8	Foe_rstrct_ind	Freedom of expression restricted individual	Interviewee felt that their freedom of expression on social media is/was restricted
9	Foe_rstrct_som	Freedom of expression restricted all	Interviewee felt that the freedom of expression on social media for some citizens in that country is/was restricted
10	Foe_rstrcted_no	Freedom of expression restricted no	Interviewee felt that there is no restriction on freedom of expression in that country for anyone
11	Mon_pur_sec	Monitoring purpose security	Interviewee felt that the government's purpose in monitoring social media is for national security
12	Mon_pur_auth	Monitoring purpose Authoritarian	The government's purpose is monitoring social media is more authoritarian
13	Pol_pur_self	Politician's purpose self	Politician purpose in monitoring social media is self serving
14	Gov_sm_ag_int	Government social media agenda internal	The government uses social media to drive their agenda internally
15	Gov_sm_ag_ext	Government social media agenda external	The government uses social media to drive their agenda in other countries
16	Gov_fk_news	Government fake news	The government has interfered in the news
17	SM_usr	Social media user	The interviewee is a social media user

Table 7 List of codes and their explanation

4.2.3   Thematic analysis

Eriksson and Kovalainen (2008) define a theme as a concept, trend, idea or distinction that emerges from the data. Once the themes have been extracted then a narrative is developed to support them. When performing a thematic analysis Bryman (2015)

suggests looking for repetitions, typologies or categories, metaphors, transitions, similarities, linguistic connectors or theory related material.

Most of the interviewees in this research do not have English as their first language so a lot of the data that Bryman (2015) suggests looking for doesn't exist, for example the use of metaphors or linguistic connectors was limited in the interviews. All interviewees spoke English, some to a better degree than others. In order to maintain a standard approach across the data analysis regardless of interviewee language capability the category that the thematic analysis was carried out using was 'repetition'.

The themes that arose during the interviews that aren't specifically covered by the coding are lawful intercept, individual politician's use of social media, government capability in relation to social media and self-censorship.

4.2.4   Lawful intercept

For this research lawful intercept refers to the lawful intercept of communications and data in order to support legal investigation or uphold the law. This includes the banning of some websites such as torrent websites and child pornography. In some country there is specific banning of content for historical reasons. E.g. Nazi content is prohibited in Germany and fascist content is banned in Italy.

4.2.5   Individual politicians and social media

This theme refers to individual politician's use of social media as part of their own campaign for staying in government or for supporting their own election or re-election campaign. This individual's use of social media would not be part of a wide government strategy and would generally be self-serving.

4.2.6   Government capability in relation to social media

This theme refers to a government's capability to either technically implement content monitoring or censorship or to have the time to intellectually implement a policy on social media. The inference from this is that the government in power is too busy trying to stay in power to deal with social media.

4.2.7   Self-censorship

Self-censorship refers to social media users not posting content that they know they are free to post out of fear of reprisals. The reprisals may come from the government, security forces or their peers.

4.3 Results

An issue raised by Bryman (2015) is that by using coding it is possible to lose context around the data. When data is extracted from an interview and abstracted into a code the setting around that data from the interviewee can be lost. To mitigate against this a thematic review (as detailed previously) of the interviews was performed in an attempt to capture some of the themes and social settings from the interviews that the coding didn't capture.

The full results from the interviews are detailed in:

Appendix 1. Data coding results

Appendix 2. Thematic review summary

Appendix 3. Thematic review from interviews

4.4 Results Analysis background

As this research is using mixed methods, there will be two sets of data produced, namely the qualitative data from the interviews and the quantitative data from the democracies review. The data will be analysed as follows:
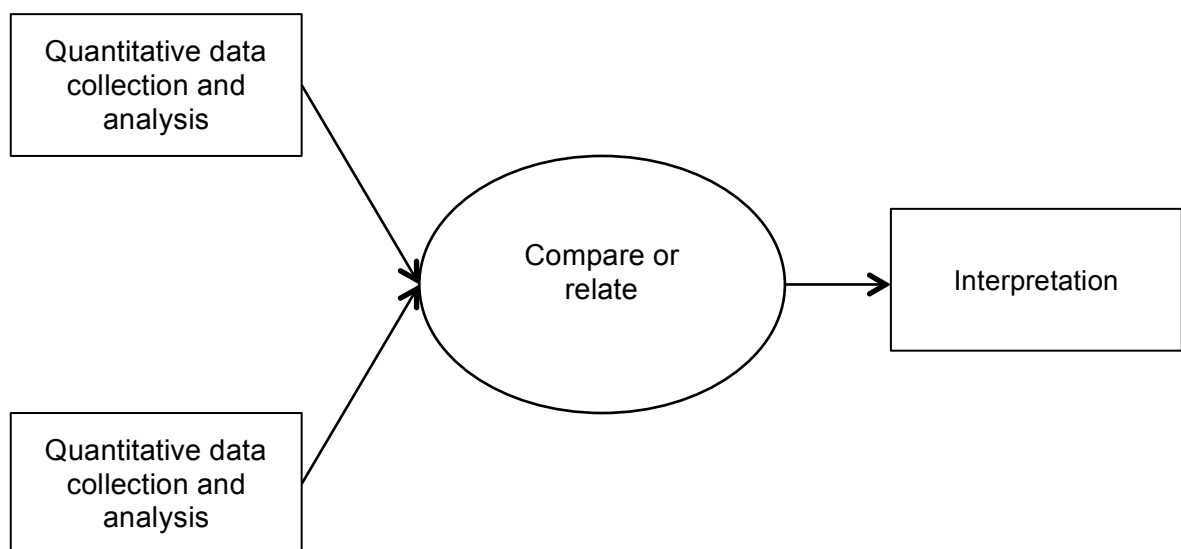
Figure 8 Mixed methods convergent parallel design analysis

4.5 Quantitative analysis of selected government types

19 participants from 15 countries were interviewed, and following the ethics approach laid out and approved by the ethics committee the data for the authoritarian regimes was gathered from secondary data and published articles. Therefore a total of 18 countries and their respective governments are categorised this research.

A combination of the Economists Unit Democracy Index (Economist, 2017) and the Global Democracy Index (DemocracyRanking, 2016) was used for this research. At this stage it must be noted that the data from the Economist's Unit index was from 2016 and the data for the global democracy index was from 2014. A gap of two years may not seem like much however as these indices are generated from a number of criteria, a small change to one of the criteria may affect the overall rating. For example, the United States fell from being a "full Democracy" to a "Flawed Democracy" in 2016 due to the increasing lack of trust in the government by ordinary people in the U.S.; a state of affairs precipitated by the 2016 Presidential election campaign (Economist, 2017).

It should be noted at this stage, that the Global democracy index has six separate categorisations; top 10, very high-level democracy, high-level democracy, medium level democracy, low-level democracy, very low-level democracy and no data available, compared to the Economist Unit's 4 categorisations.

When comparing the two datasets, the one major anomaly is that Russia rates as higher on the Global democracy index than Nigeria. On closer examination, the Global democracy rating index uses two components; Gender Equality and Health that the Economists Unit Democracy Index doesn't use. For the 2014 rating period Russia scored 77.4 and 63.9 for these components whereas Nigeria scored 34.3 and 19.1. If these were to be removed from the calculation of the index, the Global democracy index would be quite similar to the Economist's unit.

Both the Economist's Unit ranking and the Global Democracy ranking rank democracies in decreasing order from number 1 down, the more democratic the country, the lower the democracy index.

Of the four indices selected for review, two were discounted for unsuitable data or data set being overly complex and two were selected for use. The two selected to categorise the governments were the Economists Unit Index and the Global Democracy Ranking Index. These both mostly align with one major exception. On closer examination the difference was due to two components being used in the Global Democracy index that weren't used in the Economist's Unit index and when these were removed the two categorisations aligned.

The 18 countries along with their two democracy indices are listed in Table 8

Country	Economist Ranking	Economist Category	Global Democracy Ranking	Global Democracy Category
Ireland	6	Full Democracy	9	Top 10 Democracy
Germany	13	Full Democracy	7	Top 10 Democracy
Sweden	3	Full Democracy	3	Top 10 Democracy
Netherlands	12	Full Democracy	6	Top 10 Democracy
France	24	Flawed Democracy	14	Very high level democracy
USA	21	Flawed Democracy	16	High level Democracy
Italy	21	Flawed Democracy	27	High level democracy
Poland	52	Flawed Democracy	30	High level democracy
Croatia	54	Flawed Democracy	37	High level democracy
Brazil	51	Flawed Democracy	43	High level democracy
Hungary	56	Flawed Democracy	38	High level democracy
Greece	44	Flawed Democracy	41	High level democracy
South Africa	39	Flawed Democracy	71	Medium Level democracy
Ukraine	86	Hybrid Regime	72	Medium Level democracy
Nigeria	109	Hybrid Regime	107	Low level democracy
Russia	134	Authoritarian Regime	98	Low level Democracy
China	136	Authoritarian Regime	N/A	No data available
North Korea	167	Authoritarian Regime	N/A	No data available

Table 8 Democracy indices for selected countries

4.6 Analysing qualitative data

There are two main frameworks for analysing qualitative data; analytic induction and grounded theory (Bryman, 2015, Saunders et al., 2015).

4.6.1 Analytic induction

The analytic induction framework begins with a research question, which generates a hypothesis. Data is then collected and tested against the hypothesis. Cases that deviate from the hypothesis causes the hypothesis to be reformulated or for the hypothesis to be

reformulated to exclude that particular deviant case until no deviant cases are left (Bryman, 2015).

4.6.2 Grounded theory

Strauss and Corbin (1967) the founders of grounded theory defined grounded theory as the discovery of theory from data. This involves collecting data and analysing it as it is being collected. During the continuous collection and analysis themes should emerge from the data.

4.7 Results analysis

This research work uses the inductive analysis. A research question has generated a hypothesis, the data generated from the interviews is tested against the hypothesis using the framework laid out by (Bryman, 2015).

Figure 9 lists the steps in the inductive analysis of the data collected in this research. Each step will be reviewed in the coming section.
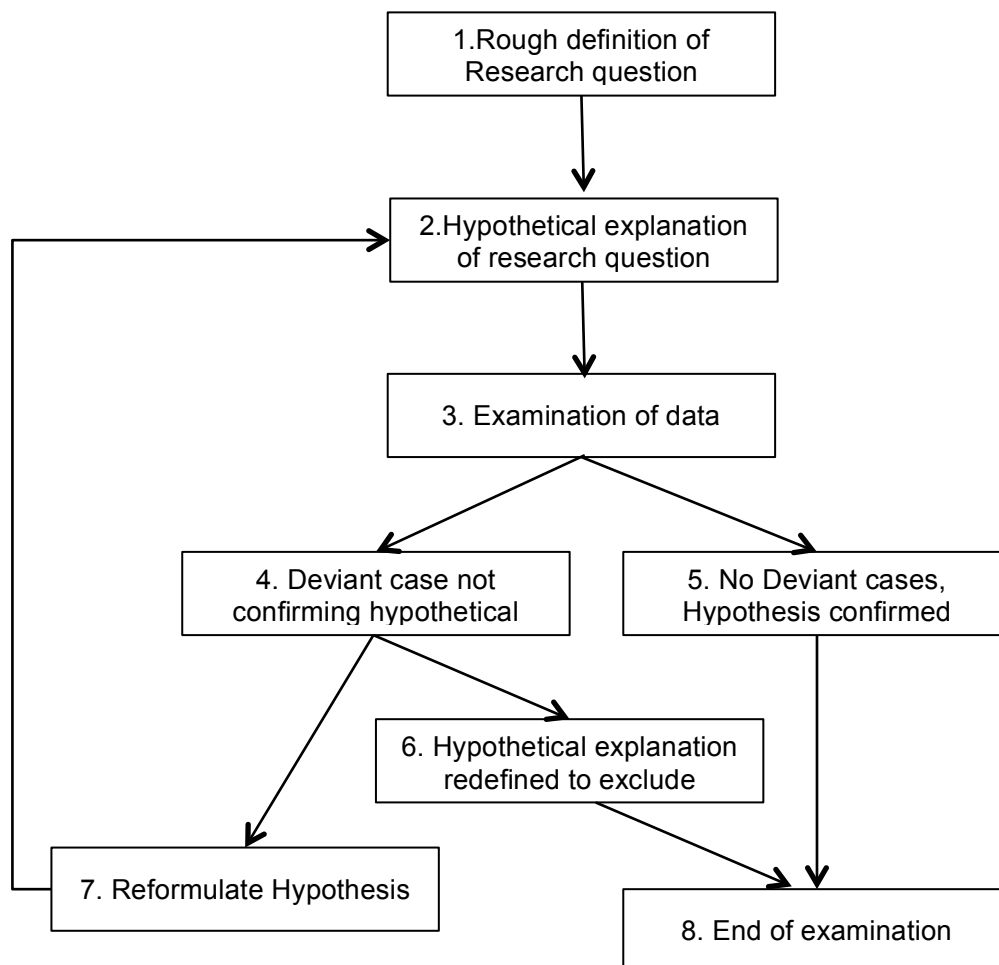
Figure 9 Induction analysis, sourced from Bryman (2015)

4.7.1 Hypothetical explanation of research question

The research question asks if it is possible to categorise government's response to social media into a number of hypothetical categories as shown Table 9

Category	Summary description	Full description
1	Locked down	Government has blocked access to social media completely
2	Government restricted social media	Government restricts access to some international social media sites, monitor and censors content on other social sites and drives their own agenda in other countries using social media
3	Semi free social media	Free access to all social media. Monitoring and censorship occur but have not prevented wide adoption of social media and do not prevent users using social media. Government may use social media to drive their agenda in other countries
4	Free social media	Free access to all social media, limited to no monitoring and censorship. If monitoring and censorship happen, it is not systematic or highly organised and would tend to be for legal purposes only. If the government uses social media, it would be for the politicians' own purposes.

Table 9 Hypothetical categories of government response ot social media

By using the key codes developed, a set of unique codes was generated to match each of the above categories. All the countries in this research were reviewed and had codes developed to suit their government's response to social media. These are listed in detail in Appendix 1. Data coding results.

4.7.2 Examination of data

The country code profile, as listed in Appendix 1. Data coding results, was tested against each of the listed category codes in Appendix 4. Categorisation Codes. This enabled the response of each country's government to be empirically categorised.

Deviant case not confirming hypothesis

If a country's category codes didn't fit, then the hypothesis was reformulated to take this deviant case into consideration. An example of this was the "locked down" category. This category was initially as too restrictive and no government's response to social media fitted in it. The hypothesis was modified to take this into consideration; this is covered in more detail in Category 1 – Locked down.

No deviant case, hypothesis confirmed

If all the country codes matched against a category code, then the overall hypothesis was deemed confirmed.

4.7.3   Category 1 – Locked down

The hypothesis for category 1 is that citizens of category 1 countries have no access to social media. For this to hold true the key "SM_Acc" (citizens have access to social media) has to be equal to "No". During the analysis phase, it was found that this category definition was too restrictive and confined and no country, even the ones with the most restrictive regimes fitted in here. In order to further the research on the categorisation hypothesis, category 1 was redefined as follows:

"The government has complete oversight and control of social media. Access, if any to social media is highly restricted and only to government officials. Content monitoring and censorship are highly prevalent."

The keys for this categorisation and their associated values are listed below:
- SM_Acc (Social Media Access) = Partial or No
- Con_vis_con (Content monitoring confirmed) = yes
- Cen_vis_con (Censorship of content confirmed) = yes
- Foe_rstrct_ind (Freedom of expression for interviewee restricted) = yes
- Foe_rstrct_som (Freedom of expression for some citizens)= yes
- Foe_rstrcted_no = (Freedom of expression for all, not restricted) = No
- Mon_pur_sec = (Content monitoring for security purposes) = No
- Mon_pur_auth = (Content monitoring for authoritarian purposes) = yes

The only country with these key value pairs in the countries selected for this research is North Korea. As an aside, other authoritarian regimes outside the scope of this study such as Syria would almost certainly fit into this category. Al-Saqaf (2016) details the monitoring and censorship used by the current regime in Syria and it generates the same results as North Korea.

4.7.4 Category 2 – Government restrictions

The hypothesis for category 2 is that for social media:

"Government restricts access to some international social media sites, monitor and censors content on other social sites and drives their own agenda in other countries using social media."

The key pair values for these sites are:
- SM_Acc (Social Media Access) = yes or partial
- Con_vis_con (Content monitoring confirmed) = yes
- Cen_vis_con (Censorship of content confirmed) = yes
- Foe_rstrct_ind (Freedom of expression for interviewee restricted) = yes
- Foe_rstrct_som (Freedom of expression for some citizens)= yes
- Foe_rstrcted_no (Freedom of expression for all, not restricted) = No
- Mon_pur_auth (Content monitoring for authoritarian purposes) = yes
- Gov_sm_ag_ext (Government drives agenda externally using social media) = yes

The only countries with these key value pairs are Russia and China. It should be worth noting at this time, that it is quite possible that other Middle Eastern authoritarian regimes would fall into this category as well.

4.7.5 Category 3 – Semi Free

The hypothesis for category 3 is:

"Free access to all social media. Content monitoring occurs but hasn't prevented wide scale adoption of social media and does not prevent users using social media or expressing their opinions. Governments may use social media to drive their own agenda in other countries."

The key value pairs for category 3 are:
- SM_Acc (Social Media Access) = yes
- Foe_rstrcted_no (Freedom of expression for all, not restricted) = No
- Mon_pur_Auth (Content monitoring for authoritarian purposes) = yes
- Gov_sm_ag_ext (Government drives agenda externally using social media) = yes

The countries with these key value pairs are the USA, Poland and Brazil.

4.7.6 Category 4 - Driving a government's own agenda through social media

The initial hypothesis for category 4 is:

"Free access to all social media. Content monitoring and censorship, if they happen are not systematic or highly organised and would tend to be for lawful intercept purposes only. Users are free to express their opinions. If the government uses social media, it would be for the politicians' own purposes."

The key value pairs for category 4 countries are:
- SM_Acc (Social Media Access) = Yes
- Mon_pur_auth (Monitoring Purpose authoritarian) = No

Citizens have access to all social media and if monitoring occurs its purpose is not authoritarian. This includes the largest number of countries such as Ireland, The Netherlands, Italy, South Africa, Croatia, Hungary, Greece, The Ukraine, Nigeria, Germany, France and Sweden.

4.8 Secondary data for Authoritarian Regimes

4.8.1 Secondary data for Russia

In Russia the "System of Operative-Investigative Measures" (SORM) was enacted in 1995 (Maréchal, 2017). This law allows the 'Roskomnadzor' the department tasked with overseeing Information, communication and mass media in Russia to block types of content without a warrant. SORM was further enhanced by the passing of the "Bloggers Law" in 2014 forcing all online outlets (including social media sites) with more than 3000 daily pages views to register with the government (Duffy, 2015). A partner law required all Wi-Fi users to register with a phone number and all SIM cards to be bought using a valid passport. It is widely know that content monitoring and censorship occurs in Russia. In 2014 Russia blocked some media and blogging sites (Soldatov, 2017, Onuch, 2015). During the presidential elections in 2016 in the United States of America it was widely reported that Russian trolls planted fake news articles in states where the election results were in the balance (Roberts, 2017).

Taking the above factors into account, the codes for Russia generated from secondary data are listed below in Table 10

SM_Acc (Social Media Access) = yes or partial
Con_vis_con (Content monitoring confirmed) = yes

Cen_vis_con (Censorship of content confirmed) = yes

Foe_rstrct_ind (Freedom of expression for interviewee restricted) = yes

Foe_rstrct_som (Freedom of expression for some citizens)= yes

Foe_rstrcted_no (Freedom of expression for all, not restricted) = No

Mon_pur_auth (Content monitoring for authoritarian purposes) = yes

Gov_sm_ag_ext (Government drives agenda externally using social media) = yes

Table 10 Codes for Russia (Generated from secondary data)

4.8.2 Secondary Data for China

China was one of the earliest adopters of content monitoring and online censorship. China initiated the "Golden shield" Project in the 1990s and in 1996 the governing management of computer information networks department starting banning content (Zheng, 2013). King et al. (2013) details the 3 ways the Chinese government monitors and censors content, firstly by blocking certain sites, secondly by "keyword blocking" and thirdly by manual censoring.

In May 2013 Chinese protesters were organising a protest for Saturday May 4th 2013, against P-Xylene in Chengdu by posting messages in Sina Weibo, the Chinese equivalent of the banned Twitter social media blogging platform. Through aggressive content monitoring the government learned of this development and in what can only be described as an Orwellian move cancelled the weekend by turning Saturday and Sunday into working days and requiring all students to attend school that weekend (Qin et al., 2017).

A report by Fallows (2008) details a memo from a Chinese internet technician concerning an order to scrub an article about an engineer who died of overwork from all sites and blogs. This was to be accomplished through using tens of thousands of censors that China has to hand.

The Chinese government also uses voluntary and paid for contributors to change the content of forums and social media sites. These are knows as the "the fifty cent army" based on what they supposedly get paid per post. Their effectiveness is questionable though (Han, 2015). Perloth (2013) reviews the Chinese government funded hackers sustained access to the New York Times and (Walker, 2016) details how both Beijing and Moscow use Internet trolls, disinformation and cyber attacked to pursue their agenda abroad.

From the above data the codes for China are listed below in Table 11

SM_Acc (Social Media Access) = yes or partial

Con_vis_con (Content monitoring confirmed) = yes

Cen_vis_con (Censorship of content confirmed) = yes

Foe_rstrct_ind (Freedom of expression for interviewee restricted) = yes

Foe_rstrct_som (Freedom of expression for some citizens)= yes

Foe_rstrcted_no (Freedom of expression for all, not restricted) = No

Mon_pur_auth (Content monitoring for authoritarian purposes) = yes

Gov_sm_ag_ext (Government drives agenda externally using social media) = yes

Table 11 Codes for China (Generated from secondary data)

4.8.3   Secondary Data for North Korea

The internet is not available to the general population in North Korea, although it is available in limited and highly monitored form to a few party elites (Byman and Lind, 2010). Zeller (2006) refers to North Korea as the "Internet's black hole". In the last few years the government has eased restrictions slightly. Foreigners are now allowed to bring their mobile phones into the country and the first Instagram photo from inside North Korea was taken in 2013 (Dewey, 2013). The service is not available to natives. Taking the above factors into consideration, North Korea's codes are reflected in Table 12.

SM_Acc (Social Media Access) = No / Partial

Con_vis_con (Content monitoring confirmed) = yes

Cen_vis_con (Censorship of content confirmed) = yes

Foe_rstrct_ind (Freedom of expression for interviewee restricted) = yes

Foe_rstrct_som (Freedom of expression for some citizens)= yes

Foe_rstrcted_no = (Freedom of expression for all, not restricted) = No

Mon_pur_sec = (Content monitoring for security purposes) = No

Mon_pur_auth = (Content monitoring for authoritarian purposes) = Yes

Table 12 Codes for North Korea (Generated from secondary data)

4.9   **Changed definitions of government response types**

During the coding of the results and the testing of the hypothesis it became apparent that the initial category definitions for category 1 "locked down" was unsuitable for the categorisation of multiple results and the testing of the hypothesis. This was marked as a deviant case and following the methodology the hypothesis was reformulated to take this into account. New category definitions were generated during the testing of the hypothesis. These along with the initial definitions are displayed in Table 13

	Category 1	
	Original codes	Revised Codes
SM_ACC	No	Partial / No
Con_aware		
Con_vis		
Con_vis_con		Yes
Cen_aware		
Cen_visible		
Cen_vis_con		Yes
Foe_rstrct_ind		Yes
Foe_rstrct_som		Yes
Foe_rstrcted_no		No
Mon_pur_sec		No
Mon_pur_auth		Yes

Table 13 Old and new codes for category 1 government response

4.10 **Thematic review**

During the interviews certain themes arose outside of the questions that were asked.
These themes; lawful intercept, politicians use of social media, government's social media
capability, self censorship, content monitoring progression are explained in

Table 14.

Theme	Explanation
Lawful Intercept	A government's ability to lawfully request the blocking of content / retrieval of records
Politicians use of social media	Do politicians use social media for their own use e.g. re-election campaigns more than for the benefit of the country?
Government social media capability	Does the government have the capability to use social media as a tool to help with society?
Self censorship	Do citizens censor what they say on social media for fear or repercussions - be that from friends / colleagues etc?
Content monitoring progression	has there been a progression in the level of content monitoring / Censorship since the onset of social media?

Table 14 Themes and explanations from interviews

The notes from each interview were re-reviewed and each country from each government
type was clashed against these themes. The data for the authoritarian regime was once

again taken from secondary sources, as have been detailed before. This data is summarised in Appendix 2. Thematic review summary.

4.11 **Results Summary**

The results of the quantitative analysis of the democracy indices and the qualitative analysis of the government response to social media are shown in Table 15.

Country	Government Type	New social media category			
		1	2	3	4
Ireland	Full Democracy				×
The Netherlands	Full Democracy				×
Germany	Full Democracy				×
Sweden	Full Democracy				×
USA	Flawed Democracy			×	
Italy	Flawed Democracy				×
South Africa	Flawed Democracy				×
Croatia	Flawed Democracy				×
Brazil	Flawed Democracy			×	
Hungary	Flawed Democracy				×
Greece	Flawed Democracy				×
Poland	Flawed Democracy			×	
France	Flawed Democracy				×
The Ukraine	Hybrid Democracy				×
Nigeria	Hybrid Democracy				×
Russia	Authoritarian regime		×		
China	Authoritarian regime		×		
North Korea	Authoritarian regime	×			

Table 15 Democracy index and country categorisation results

5　Conclusions

5.1　Introduction

This chapter will review the results in terms of the original research questions and the results from the interviews along with other available data. Areas for further research will also be suggested. The research question is to investigate if it is possible to categorise the response of different types of governments to social media into separate and distinct categories.

5.2　Conclusions

5.2.1　Government types

In order to answer the research questions, the first piece of data that was required was the codifying of different countries governments by their democracy type. This was achieved by reviewing four democracy indices including Vanhanen's index of democracy, The Economist's unit democracy Index, the Global Femocracy Ranking and data from Polity IV. Vanhanen's index and Polity IV's data was not used for reasons laid out in section 2.11 Government types. The 19 countries were categorised using the ranking system provided by the Economist's unit and the Global Democracy index. The overlap between both indices is shown in Table 16.

Economist category	Global Democracy category
Full Democracy	Top 10 Democracy
Flawed Democracy	Very high level democracy High level Democracy Medium Level democracy
Hybrid Regime	Medium Level democracy Low level democracy
Authoritarian Regime	Low level democracy

Table 16 Mapping of democratic indices categories against each other

One anomaly in the data from the Global democracy index was noticed, with Russia rating less authoritarian than Nigeria, but on closer examination of the components in the Global democracy index it was found that there were components used in the Global democracy index relating to health, environment and gender gap which weren't used in the Economist Unit's index. When these components were removed Russia fell back to an Authoritarian

regime and Nigeria move to a medium level democracy, which matched the Economist's unit index.

5.2.2   Government responses to social media

The answer to the first part of the research question is that is possible to a degree to categorise the responses of different types of governments to social media. This was achieved by developing codes from the interview questions in advance of the interviews and coding the interviewee's responses against these codes.

When the response to each country was tested against the original proposed categories and the category proved to be unsuitable a new definition for that category was generated using the codes and then the countries were re-tested against the categories. The results of this are in shown in Table 13 Old and new codes for category 1 government response . These categories line up with the categories of 'open', 'middle path' and 'free' as discussed by Pearce and Kendzior (2012), although their category list does not have a 'locked down' category such as the one proposed in this research.

The next part of this question investigates if it is possible to categorise the government type by the government response type to social media, for example, do all authoritarian regimes exhibit the behaviours associated with a category 1 government response type?

The answer to this is more complex and less black and white. A straightforward answer would be that government types do not map directly to the government response categories. However there are strong trends in the data worth nothing. The results from the investigation for this are shown in Table 15. This data shows that authoritarian regimes have type one or type two category responses, full democracies have category 4 social media responses exclusively and flawed and hybrid democracies have category 3 and 4 social media responses.

So to summarise, it is possible to categories government's response to social media, but it is not possible to fully categorise government types to government response to social media. However there are distinct trends there worthwhile of further research.

5.3   Data Interpretation

Along with the quantitative data and qualitative data, there is also the thematic data to take into consideration. The summary of this data is available in Appendix 2. Thematic review summary and the detailed responses from interviewees are available in Appendix

3. Thematic review from interviews. Some points to note here are that some of the interviewees recorded a "no" answer to Lawful Intercept being available and carried out in their countries. Lawful Intercept is a long established practise in all countries, with software options for Lawful Intercept being installed by default on Telecommunications software (EU, 1995). Interviewees not believing that Lawful Intercept takes place in their countries casts some doubt on the validity on the rest of their answers.

In full democracies and flawed democracies most interviewees were of the opinion that politicians themselves were quite comfortable using social media for their own purposes such as preparing for elections or staying elected but governments in general did not make good use of social media. Numerous examples were given by the interviewees of individual politicians using social media for their own benefit or to expound on their own views. For example Geert Wilders, the far right Dutch politician was named on a few occasions as a competent social media user by the 'Netherlands_1' and Donald Trump was mentioned by both 'USA_1' and 'USA_2'.

Another point to note is that while some governments use social media to further their agenda abroad, a prime example being Russia in the Presidential elections in the United States, other governments were still almost ignoring social media and trying to further their political agenda through the traditional media. The interviewees from Hungary, Croatia and Nigeria all mentioned their respective governments still using traditional media such as state controlled channels and the radio to get their message across to the citizens. Mergel and Bretschneider (2013) suggest in their three-stage adoption process for social media use in government that governments need to sponsor social media use from the bottom up in government departments and in the civil service. So far it seems that for a large percentage of hybrid and flawed governments those government types do not seem too interested in making the investment or taking the risk in this approach.

Another finding was the high level of self-censorship that exists – regardless of the government type. The general feeling from the interviewees was that if a person works in the civil service or is in the public eye then that person should be careful about what they post. 'France_1' gave an example of a journalist getting fired from the state broadcaster for posts. What was surprising in this regard was the self-censorship was not generally about politics or national safety concerns. It was usually more about the interviewees not wanting to receive negative feedback or having comments attributed to them on the World Wide Web forever. One American interviewee has no mention of her hobby on any of her social media accounts for fear of negative comments from her social circle. More than one

interviewee was careful about social media posts so as not to jeopardise future employment prospects.

5.4 **Further Research**

During the research for this dissertation a number of interesting further areas of research were identified. Two of these are listed below.

5.4.1 **Detailed monitoring**

The pool size for this research was limited to the extent that the results, at best can only provide an indication rather than concrete results. A suggestion for further research here would be to perform the same research with a more representative pool for each or some of the countries in this research. Another suggestion would to be to see if there is any way to interview citizens from authoritarian regimes.

5.4.2 **Monitoring and censorship circumvention in Authoritarian regimes**

Despite the fact that the knowledge of censorship is widespread in the civilian population in authoritarian regimes, citizens still find ways around these methods, in some cases using rather novel techniques.

For example, it is not that hard to bypass the great firewall of China, it is reckoned that between 2% to 3% of Chinese Internet users bypass the firewall. This may seem like a small percentage, but it equates to about 18 Million users (Mou et al., 2016). At a high level the great firewall of China blocks access to the Internet by searching for keywords in traffic and when it finds these identified keywords it forces the connection to drop. Clayton et al. (2006) showed how users have bypassed the firewall by low-level network configuration. Upon discovery of a banned keyword the firewall may send a RESET command forcing the connection to drop, but if the user changes the low-level network configuration to ignore RESET commands, the connection remains.

To bypass keyword blocking, users also use analogy metaphors or homophones. One European interviewee for this work commented that close to election dates it is illegal to comment on how politicians are doing, so metaphors or nicknames are used, or politicians from one party are called after fruits and politicians from another party are named after cheeses.

In China, King et al. (2013) noted the habit of using homophones to bypass keyword filtering. This being the substitution of banned characters for other characters that sound or look similar but have very different meanings. It is interesting to note that this habit arose in China and in Europe almost simultaneously.

Vines and Kohno (2015) proposed a platform called 'Rook', which would circumvent monitoring and surveillance by using online games as a cover. It works by slightly altering game network packets without affecting their original payload. The proposed application would not generate any additional overhead so would pass unnoticed.

The 'dust' protocol proposal from Wiley (2011) involves encrypting covert messages into a single UDP or TCP package of random length and then sprinkling these packets through a data stream.

The costs for doing any of the above are high though, Gasser et al. (2011) reported in a survey that over 30% of online bloggers who write about the Middle East and North Africa have been threatened, 5% have been demoted or reprimanded at work and 7% have been arrested. In Authoritarian regimes, the cost for online activity and dissent is high.

To conclude, the hypothesis has been tested and the results show that it is possible to categorise a government's response to social media, but its not completely possible to categorise government types with response types to social media.

Appendix 1. Data coding results

	Irl_1	Neth_1	USA_1	USA_2	Italy_1	Italy_2	Italy_3
Government type	Full	Full	Flaw.	Flaw.	Flaw.	Flaw.	Flaw.
SM_Acc	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_vis	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_vis_con	Yes	No	Yes	Yes	Yes	No	No
Cen_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cen_visible	No	No	Yes	Yes	Yes	No	No
Cen_vis_con	No	No	Yes	No	Yes	No	No
Foe_rstrct_ind	No	No	Yes	No	No	No	No
Foe_rstrct_som	No	No	Yes	Yes	Yes	Yes	Yes
Foe_rstrcted_No	Yes	Yes	No	No	No	No	No
Mon_pur_sec	Yes	Yes	No	Yes	Yes	Yes	Yes
Mon_pur_auth	No	No	Yes	Yes	Yes	No	Yes
Pol_pur_self	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gov_sm_ag_int	No	No	Yes	Yes	Yes	No	No
Gov_sm_ag_ext	No	No	Yes	Yes	No	No	No
Gov_fk_news	No	Yes	No	Yes	yes	No	Yes
SM_usr	Yes	Yes	Yes	No	Yes	Yes	No

Table 17 Data codes country 1 to 7

	SA_1	Cr_1	Brz_1	Hr_1	Gr_1	Pol_2	Ngr_1	Ukr_1
Government type	Flaw.	Flaw.	Flaw.	Flaw.	Flaw.	Flaw.	Hybrid	Hybrid
SM_Acc	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_vis	Yes	No	yes	No	Yes	Yes	No	No
Con_vis_con	Yes	No	Yes	No	Yes	No	No	No
Cen_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes
Cen_visible	Yes	No	Yes	Yes	Yes	No	No	Yes
Cen_vis_con	Yes	No	Yes	No	No	No	No	Yes
Foe_rstrct_ind	No	No	Yes	No	No	Yes	Yes	No
Foe_rstrct_som	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Foe_rstrcted_No	No	No	No	Yes	Yes	No	No	No
Mon_pur_sec	Yes	Yes	No	Yes	Yes	Yes	No	No
Mon_pur_auth	No	No	Yes	No	No	Yes	No	No
Pol_pur_self	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gov_sm_ag_int	No	No	Yes	No	Yes	Yes	No	No
Gov_sm_ag_ext	No	No	Yes	No	Yes	Yes	No	No
Gov_fk_news	?	No	?	?	Yes	Yes	Yes	No
SM_Usr	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 18 Data codes country 8 to 15

	NGR_2	Ger_1	Fra_1	Swe_1	Russia	China	North Korea
Government type	Hybrid	Full	Flaw.	Full	Auth.	Auth.	Auth.
SM_Acc	Yes	Yes	Yes	Yes	partial	Partial	No
Con_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Con_vis	No	Yes	Yes	Yes	Yes	Yes	Yes
Con_vis_con	No	No	No	Yes	Yes	Yes	Yes
Cen_aware	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cen_visible	No	No	Yes	Yes	Yes	Yes	Yes
Cen_vis_con	No	No	No	Yes	Yes	Yes	Yes
Foe_rstrct_ind	No	No	Yes	Yes	Yes	Yes	Yes
Foe_rstrct_som	Yes	No	Yes	No	Yes	Yes	Yes
Foe_rstrcted_No	No	Yes	No	Yes	No	No	No
Mon_pur_sec	No	No	Yes	Yes	Yes	Yes	Yes
Mon_pur_auth	No	No	No	No	Yes	Yes	Yes
Pol_pur_self	Yes	No	Yes	Yes	Yes	Yes	Yes
Gov_sm_ag_int	No	No	Yes	No	Yes	Yes	Yes
Gov_sm_ag_ext	No	No	No	No	Yes	Yes	Yes
Gov_fk_news	No	No	Yes	No	Yes	Yes	Yes
SM_usr	Yes	Yes	Yes	Yes	N/A	N/A	N/A

Table 19 Data codes country 16 to 22

Appendix 2. Thematic review summary

	Gov. Type	Lawful Intercept	Politicians use of Social Media	Gov. Social media capability	Self Censor	Content Monitoring progression
Irl_1	Full	Yes	Yes	No	Yes	No
Neth_1	Full	Yes	Yes	?	No	No
Ger_1	Full	Yes	Yes	No	No	No
Swe_1	Full	Yes	Yes	No	Yes	No
USA_1	Flawed	Yes	Yes	No	Yes	No
USA_2	Flawed	Yes	Yes	No	Yes	Yes
Italy_1	Flawed	Yes	yes	No	Yes	No
Italy_2	Flawed	Yes	Yes	No	Yes	No
Italy_3	Flawed	Yes	yes	No	Yes	No
Cr_1	Flawed	Yes	yes	Yes	Yes	No
France_1	Flawed	Yes	Yes	No	Yes	No
SA_1	Flawed	Yes	Yes	Yes	Yes	No
BRZ_1	Flawed	Yes	yes	No	yes	No
HR_1	Flawed	Yes	Yes	yes	Yes	No
GR_1	Flawed	Yes	Yes	No	No	No
Pol_2	Flawed	Yes	Yes	Yes	Yes	No
UKR_1	Hybrid	No	Yes	Yes	Yes	No
NGR_1	Hybrid	No	yes	Yes	Yes	No
NGR_2	Hybrid	yes	Yes	Yes	Yes	No
Russia	Authoritrian	Yes	Yes	Yes	Yes	?
China	Authoritrian	Yes	Yes	Yes	Yes	Yes
North Korea	Authoritrian	Yes	Yes	yes	Yes	?

Table 20 Table of Themes brought up by interviewees

Appendix 3. Thematic review from interviews

This Appendix contains the five main themes uncovered during the interviews and the comments from each interviewee on them.

Interviewee	Irl_1	Neth_1	USA_1	USA_2	Italy_1
Gov. Type	Full	Full	Flawed	Flawed	Flawed
Lawful Intercept	No comment	Mentioned a specific case of lawful intercept for Child Pornograpy	No comment	No comment	No comment
Politicians and social media	Some politicians use social media more than others	Some politicans use social media for their own purposes. Specific examples of Geert Wilders and Mark Rutten	Mentioned Donald Trump and twitter	Referred to Donald Trump	Mentioned an example of one case where a social media manager posted on his own name on politicians account
Low Gov social media capability	Government is quite capable of monitoring	Government monitors social media	Government monitors social media	Authorities monitors social media	Government monitors Social media
Self Censorship	Anything you post can come back to haunt you	Talked about a government policy on this, media have policy statements on freedom of expression	Talked about some people not willing to post about their hobbies or certain topics (Gun control) on social media for fear of reprisal	Gave examples of officials being fired from social media posts	Mentioned self censorship - people can get in trouble for posts on Facebook
Content Monitoring Progression	Doesn't think so	No comment	no comment	yes, content monitoring has changed over time	Doesn't think so

Table 21 Themes Country 1 to 5

Interviewee	Italy_2	Italy_3	Cr_1	Ger_1	SA_1
Gov. Type	Flawed	Flawed	Flawed	Full	Flawed
Lawful Intercept	No comment	Case of 5 star movement being monitored	child pornography being banned on facebook and torrent sites blocked	Knows about it	No comment
Politicians and social media	Politicians use social media, harvesting new posts, collecting new followers	Two politicians - Grillo and Renzi who use social media for their own purposes	Some politicians use social media for inspirations quotes	Politicians use it to a degree	Politicians use their own accounts for elections
Low Gov social media capability	Government has the means and does monitor social media	Postal department in government tasked with monitoring, government uses traditional media	Does not think the government has the capacity, but private companies do Government uses traditional media	Thinks the government has the capacity	No comment
Self Censorship	Commented that smart people self censor. Fine line between freedom of expression and defamation	Self censorship, some people fear to post, discussed reprisals from	Civil servants, party members may be careful of their posts	No	Mentioned particular story about child violenece and domestic abuse disappearing from social media quickly
Content Monitoring Progression	No Comment	No comment	no comment	Does not think so	No

Table 22 Themes country 6 to 10

Interviewee	BRZ_1	HR_1	GR_1	Pol_2	UKR_1
Gov. Type	Flawed	Flawed	Flawed	Flawed	Hybrid
Lawful Intercept	Interviewee, as ISP engineer had received requests from Government for data	No comments	No comments	No comments	No comment
Politicians and social media	Some politicians more than others	Some politicians use social media for their own purposes, government still uses traditional media	President used social media to psuh for a yes vote in the EU referendum	Some politicians use it for their own purposes, mentioned Donald Tusk, Black Friday	Government uses old media (TV, press) to push their message. Politicians use social media to get re-elected
Low Gov social media capability	Government had as intelligence branch to deal with this	Government does not have the knowledge, new political party will use social media	Mentioned how the government monitored social media during the protests	Government more concerned with traditional media	Yes, govermnment more concerned with traditional media
Self Censorship	Yes, service providers must keep records, people careful of posts	Mentioed that there are plenty of anti government posts and articles on social media	Doesn't believe this is the case	People are careful of what they post, referenced Abortion law and Black Friday again	Talked about posting on the war in the east may get the poster into trouble
Content Monitoring Progression	Does not think so	No comment	no comment	Does not think so	Does not think so

Table 23 Themes country 11 to 15

Interviewee	NGR_1	NGR_2	France_1	Sweden_1
Gov. Type	Hybrid	Hybrid	Flawed	Full
Lawful Intercept	No comment	No Comment	It happens	Aware of it
Politicians and social media	Politicians use socia media for their own campaigns	Certain politicans do - 'spewing their own thoughts'	All use it, for own purposes	All politicians uses Social media
Low Gov social media capability	Doesn't think the government has the capacity, Government would block facebook rather than individual posts	Doesn't think the government has the capacity, too busy worrying about re-election	Government uses social media to tap into the sentiment of the county, mentioned presidential elections	Government is advanced here, has a separate dept. called the FRA to deal with this. Government is social media savvy and uses it
Self Censorship	Talked about people making posts and being arrested and charged with 'obstructing public peace'	People can post all they want, but government officials may not for fear of reprials	Mentioned self censorship and one TV journalist who posted letter to Sarkozy and got fired	Yes, people tend to keep their opinions more muted than before, growth of 'Alt right'
Content Monitoring Progression	No	No	Does not think so	Does not think so

Table 24 Theme data country 16 to 19

Appendix 4. Categorisation Codes

	Category			
	1	2	3	4
	Locked Down	Government Restrictions	Semi Free	Free
SM_ACC	No	Partial / yes	Yes	Yes
Con_aware				
Con_vis				
Con_vis_con		Yes	Yes	
Cen_aware				
Cen_visible				
Cen_vis_con		Yes		
Foe_rstrct_ind		Yes	Yes	No
Foe_rstrct_som		Yes	Yes	No
Foe_rstrcted_no		No	No	Yes
Mon_pur_sec		Yes		
Mon_pur_auth			Yes	No
Pol_pur_self				
Gov_sm_ag_int				
Gov_sm_ag_ext		Yes	Yes	
Gov_fk_news				
SM_usr				

Table 25 Initial categorisation codes

	Category			
	1	2	3	4
	Locked Down	Government Restrictions	Semi Free	Free
SM_ACC	Partial / yes	Partial / yes	Yes	Yes
Con_aware				
Con_vis				
Con_vis_con	Yes	Yes	Yes	
Cen_aware				
Cen_visible				
Cen_vis_con	Yes	Yes		
Foe_rstrct_ind	Yes	Yes	Yes	No
Foe_rstrct_som	Yes	Yes	Yes	No
Foe_rstrcted_no	No	No	No	Yes
Mon_pur_sec	No	Yes		
Mon_pur_auth	Yes		Yes	No
Pol_pur_self				
Gov_sm_ag_int				
Gov_sm_ag_ext		Yes	Yes	
Gov_fk_news				
SM_usr				

Table 26 Final categorisation codes

Appendix 5. Ethical Approval

School of Computer Science & Statistics Research Ethics Application

CHECKLIST
The following documents are required with each application:

1.	• **SCSS Ethical Application Form**	
2.	• **Participant's Information Sheet** must include the following: a) Declarations from Part A of the application form; b) Details provided to participants about how they were selected to participate; c) Declaration of all conflicts of interest.	
3.	• **Participant's Consent Form** must include the following: a) Declarations from Part A of the application form; b) Researchers contact details provided for counter-signature (your participant will keep one copy of the signed consent form and return a copy to you).	
4.	• **Research Project Proposal** must include the following: a) You must inform the Ethics Committee **who** your intended participants are i.e. are they your work colleagues, class mates etc. b) How will you recruit the participants i.e. **how** do you intend asking people to take part in your research? For example, will you stand on Pearse Street asking passers-by? c) If your participants are under the age of 18, you must seek both parental/guardian AND child consent.	
5.	• Intended **questionnaire**/survey/interview protocol/screen shots/representative materials (as appropriate)	
6.	• **URL** to intended on-line survey (as appropriate)	

Notes on Conflict of Interest

1. If your intended participants are work colleagues, you must declare a potential conflict of interest: you are taking advantage of your existing

relationships in order to make progress in your research. It is best to acknowledge this in your invitation to participants

2. If your research is also intended to direct commercial or other exploitation, this must be declared. For example, "Please be advised that this research is being conducted by an employee of the company that supplies the product or service which form an object of study within the research."

Notes for questionnaires and interviews

1. If your questionnaire is **paper based**, you must have the following **opt-out** clause on the top of each page of the questionnaire: "Each question is optional. Feel free to omit a response to any question; however the researcher would be grateful if all questions are responded to."
2. If you questionnaire is **on-line**, the first page of your questionnaire must repeat the content of the information sheet. This must be followed by the consent form. If the participant does not agree to the consent, they must automatically be exited from the questionnaire.
3. Each question must be **optional**.
4. The participant must have the option to '**not submit, exit without submitting**' at the final submission point on your questionnaire.
5. If you have open-ended questions on your questionnaire you must warn the participant against naming **third parties**: "Please do not name third parties in any open text field of the questionnaire. Any such replies will be anonymised."
6. You must inform your participants regarding **illicit activity**: "In the extremely unlikely event that illicit activity is reported I will be obliged to report it to appropriate authorities."

School of Computer Science & Statistics	
Research Ethics Application	

Part A

Project Title: **An investigation into the four stages of adoption of social media by governments**

Name of Lead Researcher (student in case of project work): **Kieran Ryan**

Name of Supervisor: **Brian Gillespie**

TCD E-mail: **Kiryan@tcd.ie**

Contact Tel No.: **(087) 3298 258**

Course Name and Code (if applicable): **Masters degree in Management of Information Systems**

Estimated start date of survey/research: **17/5/2017**

I confirm that I will (where relevant):

Familiarize myself with the Data Protection Act and the College Good Research Practice guidelines http://www.tcd.ie/info_compliance/dp/legislation.php;

- Tell participants that any recordings, e.g. audio/video/photographs, will not be identifiable unless prior written permission has been given. I will obtain permission for specific reuse (in papers, talks, etc.)
- Provide participants with an information sheet (or web-page for web-based experiments) that describes the main procedures (a copy of the information sheet must be included with this application)
- Obtain informed consent for participation (a copy of the informed consent form must be included with this application)
- Should the research be observational, ask participants for their consent to be observed
  Tell participants that their participation is voluntary
- Tell participants that they may withdraw at any time and for any reason without   penalty
  Give participants the option of omitting questions they do not wish to answer if a questionnaire is used
- Tell participants that their data will be treated with full confidentiality and that, if published, it will not be identified as theirs
- On request, debrief participants at the end of their participation (i.e. give them a brief explanation of the study) Verify that participants are 18 years or older and competent to supply consent.
- If the study involves participants viewing video displays then I will verify that they understand that if they or anyone in their family has a history of epilepsy then the participant is proceeding at their own risk

- Declare any potential conflict of interest to participants.
- Inform participants that in the extremely unlikely event that illicit activity is reported to me during the study I will be obliged to report it to appropriate authorities.
- Act in accordance with the information provided (i.e. if I tell participants I will not do something, then I will not do it).

Signed: ....

Date: ....6/6/2017.................................

Lead Researcher/student in case of project work

Part B

Please answer the following questions.		Yes/No
Has this research application or any application of a similar nature connected to this research project been refused ethical approval by another review committee of the College (or at the institutions of any collaborators)?		No
Will your project involve photographing participants or electronic audio or video recordings?		No
Will your project deliberately involve misleading participants in any way?		No
Is there a risk of participants experiencing either physical or psychological distress or discomfort? If yes, give details on a separate sheet and state what you will tell them to do if they should experience any such problems (e.g. who they can contact for help).		Yes
Does your study involve any of the following?	Children (under 18 years of age)	No
	People with intellectual or communication difficulties	No
	Patients	No

Details of the Research Project Proposal must be submitted as a separate document to include the following information:

1. Title of project
2. Purpose of project including academic rationale
3. Brief description of methods and measurements to be used
4. Participants - recruitment methods, number, age, gender, exclusion/inclusion criteria, including statistical justification for numbers of participants
5. Debriefing arrangements
6. A clear concise statement of the ethical considerations raised by the project and how you intend to deal with them
7. Cite any relevant legislation relevant to the project with the method of compliance e.g. Data Protection Act etc.

Part C

I confirm that the materials I have submitted provided a complete and accurate account of the research I propose to conduct in this context, including my assessment of the ethical ramifications.

Signed: *(signature)* .... Date: ....6/6/2017...............

Lead Researcher/student in case of project work

INFORMED CONSENT FORM

LEAD RESEARCHERS: Kieran Ryan

BACKGROUND OF RESEARCH: It has been noted that various imperfect democracies (this can include flawed or hybrid democracies, including such countries as the U.S., Belgium, Italy, The Ukraine, Poland etc.) react to social media in different ways. Some regimes have tried to block social media whilst other regimes appear to use it for societal monitoring. The aim of this research is twofold:

1) To research through academic papers, publications and new articles if it is possible to categorise the response of governments to social media into four separate and distinct categories
2) to gain first hand experience of how different governments use social media and if it is possible to categorise the way imperfect governments deal with social media into four categories based on interviewees responses

PROCEDURES OF THIS STUDY: The procedure of this study will involve interviewing individuals who are either from, or who have spent a substantial amount of time living in imperfect democracies. Imperfect democracies can include hybrid or flawed democracies. In order to protect potential interviewees, no citizen from an authoritarian regime will be interviewed for this piece of research, any reference to social media under authoritarian regimes will be based on academic research solely and will not include any comment, or reference to any individual who has lived in or spent any time living under an authoritarian regime.

The lead researcher is looking to interview up to ten individuals between the ages of 20 and 45 who have spent a substantial amount of time living in an imperfect democracy. The lead researcher is looking to take advantage of his existing personal and professional relationships in order to make progress in this research study. All participants in this research study will be acquaintances, colleagues or ex-colleagues of the lead researcher. Participation in this research is entirely voluntary and the prospective interviewee is not obliged in any way to participate and if they do wish to participate they will be offered the option to leave at any point during the process and have any notes relating to them destroyed securely by shredding.

The interview will be semi-structured and will last from 45 minutes to an hour. Notes will be taken during the interview and later transcribed into a document. At no point during the interview will the interviewee be asked to disclose their social media identities and all interviewees will only ever be referenced by a pseudo-name (e.g. Belgium_1) in the interview notes. The participants will be offered a copy of all notes and files. If the participants request a copy of the interview notes these will be forwarded to the participants in an encrypted format with the

password sent via another medium e.g. text message. Participants will also be offered an electronic copy of the final report.

Risks

Some social media users resident in countries under authoritarian regimes have experienced serious reprisals as a result of comments they have posted. These reprisals have ranged from having access to the internet restricted to unlawful detention and serious physical harm to them and to members of their family. Interviewees need to be aware of the potential risks to them if they are identified. No-one from an authoritarian regime will be interviewed for this piece of research, however citizens from imperfect democracies should be aware of potential risks.

A number of measures will be used to safeguard participants and mitigate this risk:

1) No audio or video recordings of interviews will be made
2) No participant's name or their social media username will be identified in the final report or in any other documentation. Interviewees will be referred to using a pseudo-name such as "Russia_1"
3) Interview notes will be transcribed and stored securely on an encrypted device using at least 256 bit encryption
4) Interviewee identities or notes from the interview will not be shared with anyone, any public or private body, any publication or made available through any online forum or print media
5) Physical consent forms will be digitised and the digitised versions will be stored on the encrypted storage device, the physical consent form will be securely destroyed by cross shredding
6) All notes and any material containing any reference to any interviewee will be stored on an encrypted device. This device will be physically shredded using a hard disk shredder on the 31st October 2017

If any interviewee from an imperfect democracy experiences any form of reprisal in Ireland as a result of this study they should contact the Gardai immediately.

INTERVIEWEE SELECTION:

All participants that will be asked would they like to participate in interviews are either know by the lead researcher personally or professionally and the lead researcher already has contact details for these prospective participants. No person not acquitted with the lead researcher will be asked to participate. The lead researcher will not maintain any new contact details for prospective interviewees or store any further contact detail on the prospective interviewees.

PUBLICATION: The results of this research will be published as part of a dissertation for the MSc in Management Information Systems and will be available in Trinity College Dublin. Individual comments and viewpoints may be included, if so they will be anonymised.

Conflict of Interest: This research is being undertaken by the lead researcher, Kieran Ryan and could entail interviewing past and present colleagues or other contacts within his professional network. None of the potential participants report to the lead researcher or report to the same director as the lead researcher. All participants will be asked to participate with honesty and integrity and it will be explained to them that they are under no obligation to continue if they feel uncomfortable with the interview.

The research does not involve any company related information and is related to the potential candidates' experience of using social media in an authoritarian regime. All information provided will be regarded as strictly confidential and will be used solely for the purpose of this research.

DECLARATION:

- I am 18 years or older and am competent to provide consent.
- I have read, or had read to me, a document providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
- I agree that my data is used for scientific purposes and I have no objection that my data is published in scientific publications in a way that does not reveal my identity.
- I understand that if I make illicit activities known, these will be reported to the appropriate authorities.
- I understand that I may stop electronic recordings at any time, and that I may at any time, even subsequent to my participation have such recordings destroyed (except in situations such as above).
- I understand that, subject to the constraints above, no recordings will be replayed in any public forum or made available to any audience other than the current researchers/research team.
- I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.
- I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.
- I understand that my participation is fully anonymous and that no personal details about me will be recorded. <If the research involves viewing materials via a computer monitor> I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
- I have received a copy of this agreement.

PARTICIPANT'S NAME:

PARTICIPANT'S SIGNATURE: _____

Date:

Statement of investigator's responsibility: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERS CONTACT DETAILS:

(e-mail) kiryan@tcd.ie, (mobile) 087 3298 258

INVESTIGATOR'S SIGNATURE:

Date:

TRINITY COLLEGE DUBLIN
INFORMATION SHEET FOR PROSPECTIVE PARTICIPANTS

Background to project

In the last fifteen years social media has become a hugely popular form of informal communications on the internet throughout the vast majority of countries in the world. As the level of internet access has increased dramatically since the early 1990s, be it on home broadband, mobile phones or in internet cafes, social media platforms, blogging sites and micro blogging sites have seen huge levels of usage especially in younger members of society. It has allowed members to create online networks of friends or to connect people who share similar views.

Social media has been credited with a lot of social upheaval, some positive, some not so positive:
- The velvet revolution
- The Arab spring movement
- Occupy movement's demonstrations
- London riots

Initially when social media started having an impact, most governments did not know how to respond to social media and its impact on citizens whose viewpoints may not have agreed with the government's viewpoints. There were some misguided attempts to deal with social media such as Tunisia trying to hack all Facebook accounts and Egypt trying to turn off the internet, neither approach worked. However, since then some regimes have grown to accept and even adopt social media as a platform and most governments and politicians across the world nor have social media accounts.

This research paper aims to investigate if its possible to categorise the stages of adoption of social media by governments as listed below:

1. Total blocking of social media
2. Allow limited access to the social media or access to the local equivalent of social media
3. Monitoring of social media for intelligence purposes
4. Driving government's own agenda through social media

Procedure of this study:

The researcher is requesting an interview of 45 minutes to an hour with potential participants who have experience of using social media in flawed democracy. The researcher is looking to interview up to ten participants who have either lived in a flawed democracy or a hybrid democracy.

- A flawed democracy being a country with fair elections but where there may be issues with media freedom (.e.g. Italy, France Portugal, etc.).
- A hybrid democracy being one where there are election irregularities and sometimes there can be pressure put on the judiciary and the press. (e.g. The Ukraine, Nigeria)

Potential participants have been identified through the lead researcher's extended professional network and some potential participants are currently colleagues of the lead researcher, though not working in the same directorate with the lead researcher's current employer. Participation in the interview process is entirely voluntary and the potential participants have the right to not answer any question or to withdraw from the interview without penalty at any time. At no stage will the potential participants be directly identified in the research and will only ever be referred to, for example as "Italy_1" or "France_2" in the research.

The interview should last between 45 minutes to an hour and will not go beyond the hour mark. There are identified risks to the potential participants and all potential participant's should be aware of these. Some social media users resident in countries under authoritarian regimes have experienced serious reprisals as a result of comments they have posted. These reprisals have ranged from having access to the internet restricted to unlawful detention and serious physical harm to them and to members of their family. Potential interviewees need to be aware of the potential risks to them if they are identified. However as no-one from an authoritarian regime will be interviewed for this piece of research these risks do not apply, but potential interviewees should be aware of them.

A number of measures will be used to safeguard participants and mitigate this risk:

1) No audio or video recordings of interviews will be made
2) No participant's name or their social media username will be identified in the final report or in any other documentation. Interviewees will be referred to using a pseudo-name such as "Russia_1"
3) Interview notes will be transcribed and stored securely on an encrypted device using at least 256 bit encryption
4) Interviewee identities or notes from the interview will not be shared with anyone, any public or private body, any publication or made available through any online forum or print media

5) Physical consent forms will be digitised and the digitised versions will be stored on the encrypted storage device, the physical consent form will be securely destroyed by cross shredding
6) All notes and any material containing any reference to any interviewee will be stored on an encrypted device. This device will be physically shredded using a hard disk shredder on the 1st October 2017

The potential participants may benefit by gaining a fuller understanding of social media and its usage. The participants will never be directly identified in the research document, even when in draft format.

Once ethics approval is finalised and the participants agree to the interview, the researcher will hold a face to face interview or a video interview with the participants. The transcription notes will be stored in an encrypted folder. All information will be treated confidentially and in full compliance with the Data Protection Acts of 1988 and 2003. All transcriptions will be deleted on the 31st October 2017. Participants may request a copy of their interview notes and interview transcription before deletion, if a participant does request a copy of their files, they will be supplied to them in encrypted format with the password provided separately. Transcription notes will not be supplied to anyone outside of the research project or made available on any forum. If the participant requests a debriefing, one will be arranged for them. All participants will be offered a copy of the research once it is complete.

Appendix 1. Interview Questions

Q.1.a What social media sites would you use in Country X?
Q.1.b Are you aware of censorship or content monitoring on these sites or on other social media platforms in Country X?

Q.2.a Have you personally experienced censorship or content monitoring of social media local in Country X?
Q2.b If so can you furnish further details on this?
Q2.c Are you aware of wider examples of content monitoring or censorship of social Media in Country X?

Q.3.a Have you tried to access social media sites from outside Country X that are prohibited / blocked?
Q3.b What was the result?

Q.4.a For social media sites that are blocked in Country X have you use the country local equivalent?
Q4.b Can you give examples?

Q.5.a Has your freedom of expression on social media in Country X been restricted?
Q.5.b Do you think everyone in Country X has the freedom to post their opinions on social media without fear of reprisal?

Q.6.a Do you feel that content on social media or the local equivalent in Country X is monitored?
Q6.b Can you provide any examples to support this?

Q.7. Why do you think social media is being monitored?

Q.8.a Do you think that the government in Country X is using Social media to monitor both citizens AND local government?
Q.8.b If so, can you provide any examples of this?

Q.9.a For governments that have adopted using social media, are you aware of government-backed efforts to impact news?
Q.9.b Can you give examples of this behaviour?

Q.10.a Do you believe that the government in Country X uses Social media to drive their own agenda in Country X?
Q.10.b Can you provide examples of this?

Q.11.a Do you think that the government in Country X uses Social media to drive their own agenda in other countries?

Q.11.b Can you provide examples of the government of country X using social media to drive their own agenda in other countries?

Appendix 6. Example of questions

Q.1.a What social media sites did you use in Country X?

Q.1.b Are you aware of censorship or content monitoring on these sites or on other social media platforms in Country X?

Q.1.c If you're not directly aware of censorship or content monitoring on these sites do you believe these practises are being carried out in Country X?

Q.2.a Have you personally experienced censorship or content monitoring of local social media in Country X?

Q.2.b If so can you furnish further details on this?

Q.2.c Are you aware of wider examples of content monitoring or censorship of social Media in Country X?

Q.2.d If so can you furnish further details on this?

Q.3.a Have you tried to access international social media sites from outside Country X that are prohibited / blocked?

Q3.b What was the result?

Q.4.a For international social media sites that are blocked in Country X have you used the country local equivalent?

Q.4.b Can you give examples?

Q.5.a Has your freedom of expression on social media in Country X been restricted?

Q.5.b Do you think everyone in Country X has the freedom to post their opinions on social media without fear of reprisal?

Q.6.a Do you feel that content on social media or the local equivalent in Country X is monitored?

Q6.b Can you provide any examples to support this?

Q.7.a Why do you think social media is being monitored?
N/A

Q.7.b What you think is the authorities' purpose in monitoring social media?

Q.7.c What leads you to believe they are monitoring it?

Q.8.a Do you think that the government in Country X is using Social media to monitor both citizens AND local government?

Q.9.a For governments that have adopted using social media, are you aware of government-backed efforts to influence or distort events or the news?

Q.9.b Can you give examples of this behaviour?

Q.10.a Do you believe that the government in Country X uses Social media to drive their own agenda in Country X?

Q.10.b What makes you think this?

Q.10.c Can you provide examples of this?

Q.11.a Do you think that the government in Country X uses Social media to drive their own agenda in other countries?

Q.11.b Can you provide examples of the government of Country X using social media to drive their own agenda in other countries?

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