



# Master Thesis

How can Government Organizations use Web 2.0?

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*This Master's Thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.*

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## **Preface**

This master thesis was conducted during the spring of 2013, at the University of Agder and in connection with the Department of Information Systems, Faculty of Economics and Social Sciences.

The purpose of the study was to investigate or do a research on how government organizations can use Web 2.0 or Social Media. I answered this research by proposing a framework, a framework with influential mechanisms and categories that suggests how government organizations should use Web 2.0.

I will also like to thank the ten participants from the five different organizations I did my investigation. Their input, time and willingness to participate in this study was much appreciated and I hope that this study provide the theoretical and practical needs for this area of research.

I will like to give a special thanks to my supervisor, Associate Professor Øystein Sæbø, for his constructive feedbacks, suggestions and guidelines but most importantly, his critiques or reviews that encouraged me to challenge myself and explore the boundaries of my limits. I will also like to thank Professor Bjørn Erik Munkvold, Associate Professor Tom Roar Eikebrokk and Professor Maung K. Sein for giving lectures and feedbacks through the course of IS-404 – Research Methods in Information Systems. Not forgetting Associate Professor Leif Skiftenes Flak and once again my supervisor Associate Professor Øystein Sæbø for conducting the IS-417 – e-Government and e-Democracy during which I conducted a literature review as well as received great insight on e-Government and e-Democracy related topics. These courses truly set the foundation needed for me to complete my master's thesis.

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## Abstract

Over the past few years, most government organizations have been using e-Government and m-Government successfully with few difficulties along the way. These two forms of governments provide a solid foundation for government organizations to take the next step by becoming more participative, and engage citizens on various social media channels because most of their information and services are already digital. There are several existing research on the use of social media by organizations, most of which focus on businesses. Even though there are some similarities between the public and private sectors there are also several differences. And because of these differences, there is a theoretical and practical need for research focusing on how government organizations can use Web 2.0.

The aim of this thesis is to understand how government organizations are using social media or Web 2.0 in their respective organizations while filling in the gap basing on related findings, to propose how they should use Web 2.0. Using social media can be complex, there are several advantages like democratic participation and engagement, co-production; but there are also disadvantages or challenges like privacy concerns and untrustworthy content. Organizations need to be able to handle these challenges as well as realize the full potential and benefits for using social media platforms or channels.

Due to the fact that there is very little existing research on how government organizations can use Web 2.0 or social media, the complexity of social media and the many different social media applications and participative factors to take into consideration, I investigated in two stages to truly understand the subject area. 1) A literature review was conducted basing on 43 articles that were placed in a concept matrix to create an overview of the subject area as well as to ensure a balance on relating topics. 2) 10 qualitative semi-structured interviews were conducted in 5 different government organizations: a university, the road administration, labor and welfare administration, county governor's office and the regional council. All informants involved in this research were responsible for several social media aspects within their respective organizations.

This research proposed a DOM Framework that illustrates how government organizations can use Web 2.0. The DOM framework consists of: four Key Mechanisms and three main categories. The *Key Mechanisms* are: Planning, Stakeholders, Transformation Area and Evaluation. And the three main categories are *Demand-pull*, *Operations* and *Management*, where each first letter in the main categories is represented in DOM. Basing on the DOM framework; I concluded by suggesting that government organizations can use social media by going through three stages while using the Key Mechanisms to positively influence and support the three stages. The first stage is the Demand-pull where organizations establish their reasons for using social media and the reasons that will encourage participants or users to return. They should also be able to select the social media applications that will support their goals, decide how they will participate in terms of information sharing or cross-agency collaboration and finally understand the underlying technologies that will ensure customization, integration or further development when needed. Stage 2, Operations ensures that the organization understands the various social media activities of their selected applications. In short what can be done, for example comments, links. Stage 3, Management suggests several elements and activities that need to be managed. For example who will be doing the monitoring, what information they will share, privacy issues, social media strategies, etc. all of which needs to be managed. The Key mechanisms are supposed to be used to influence and support the three main categories or stages. For example planning can be used on every aspect and ensure that all strategies are align.



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## 1. Introduction

Most governments found it beneficial to change and become more digital and accessible over the past few years, an idea which led to the concept of e-Government that was copied from e-Business to improve the public sector (Wei, 2010). Abramson and Means 2001, defines e-Government as “the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees (government employees)” (Ndou, 2004). Few advantages of e-Government is that it is associated with transparency within the government, anticorruption and accountability (Ndou, 2004).

The next stage seemed to be the advancement in mobile technologies, especially the introduction of the internet on mobile phones, PDAs, Wi Fi and wireless network (Ghyasi & Kushchu, 2004) created a new and somehow improved channel to deliver government services called Mobile Government or m-Government. These mobile technologies devices came with a new set of values, for example: these technologies ex: mobile phones, can fit in your pocket, they are personal which create certain level of privacy but most importantly it enables access to government information and services from everywhere and anytime, since it is always with the owner.

E-government was taken from the concept of e-Business (Wei, 2010), and it has shown a lot of great potentials and success in different sectors of the government. An example of one of these stories is Norway, with the successful launch of the “Norwegian e-Government Program”. This concept makes one start to wonder if borrowing from enterprise 2.0 will yield the same amount of success in government organizations as it has for private organizations. After all they are both organizations, slightly different types but they do have some similarities (Euske, 2003).

Web 2.0 started even more recently and started catching on very quickly even though there are still disagreements/misunderstandings and multiple definitions about what it truly means. O'Reilly (2007) defines Web 2.0 as “the network as platform, spanning all connected devices with its application taking the most advantages of the platform; delivering software as a continually updated service that improves with the frequency its being used, consuming and remixing data from multiple sources, including individual users whose provided data and services allows remixing by others.” The key concept behind Web 2.0 is to create a network effect through architecture of participation, beyond web 1.0. Few applications and tools of web 2.0 includes: blogs, wikis, social bookmarking, media-sharing services, social networking and social presence systems, collaborative editing tools, syndication and notification technologies, etc. (Torres-Coronas, Monclús-Guitart, Rodríguez-Merayo, Vidal-Blasco, & Simón-Olmos, 2010) few examples of the mentioned applications and tools are: YouTube, Facebook, Google Docs and Spreadsheets and so on.

The web 2.0 technologies could provide a new and unique way for information and services delivery as well as increase the level of participation and involvement of the public. With these new possibilities, there is a need to set the basis for Web 2.0 in the public sector. There have been several examples and frameworks created specifically for the private sector, for example the SLATES framework by McAfee (2006). The acronym SLATES presented by McAfee (2006) is meant to create the ease of use and let the knowledge acquired from participation emerge. SLATES stand for: Search, Links, Authoring, Tags, Extension and



Signals and when it comes to contributing, finding specific information, getting alerts about interesting topics, SLATES can be very useful. The SLATES framework is further explained in the literature review but was introduced to establish why there is a need for more research in relation to the use of social media in the government.

The implementation of Web 2.0 has a lot of benefits but it also has challenges that are tied to user participation like quality insurance, authentication, moderation, manipulation, (Osimo, 2008) etc. but more importantly these mediums are being used by citizens, public servants and so on, without the control of the government. By implementing Web 2.0 in government organizations, they will be in the position to establish governance mechanisms as well as risk management strategies that will help with the loss of control and the challenges of user participation like privacy issues, ethical problems or the use of provocative language. E-Government and m-Government have already set the foundations for Web 2.0 platforms and technologies but how can Web 2.0 be seen and used as an added value or a new trend for service and information delivery as well as participation. This brings us to the research question.

**1.1 The Research Question**

This study is based on the following research question:

**How can Government organizations use Web 2.0?**

Few of the focus areas will include:

- Internal and external participant
- Services, operations, feedbacks, public and private meetings, etc. and present methods of communication and collaboration
  - This show help in determining where Web 2.0 fits within the government organizations

I chose to start with these focus areas because; for example, by looking at the participant or stakeholders of the organization, I should be able to understand why and how they are going to use Web 2.0. There have been several researches like the SLATES framework that was originally developed for the private sector and because of this; a framework tailored to suit the needs of the public sector is needed. Even though private and public organizations are of different types, there are also similarities. Euske (2003) discussed several differences and similarities between the two organizations, some of which includes:

**Table 1 Differences and Similarities of private and public organizations (Euske (2003))**

<b>Few Differences and Similarities between private and public organizations</b>		
<b>Differences</b>		
<b>Factors</b>	<b>Public sector</b>	<b>Private sector</b>
Constraints and political influence	Mandates and obligations from authority networks and users	Law and internal consensus indirect
Scope of impact	Considerable social impact	Narrow concerns with little societal impact
Ownership	Citizens often act as owners ubiquitous stakeholders	Stockholders Few stakeholders
Organizational process goals	Shifting, complex, conflicting equity dominant concern	Clear and agreed upon efficiency the dominate concern
Authority limits	Contingent upon stakeholders	Vested in internal authority

		figures
<b>Similarities</b>		
Finance function	prepare budget, prepare annual financial reports, etc.	
Human resources	Hire employees, train employees, etc.	
Information Technology	install and maintain software and hardware, etc.	
General functions	manage employees, maintain facility, etc.	

The reason presenting the similarities and differences between the public and private sectors is establish that frameworks created for businesses could be insufficient to draw conclusions for the government sector. In order to answer this research question, a similar framework for government organizations should be developed.

## 1.2 Motivation

The main motivation here is to help government organizations realize if there is any potential usefulness and collaborative potential as well as benefits that the Web 2.0 presents. On the other hand Web 2.0 encourages participation, transparency, openness, collective intelligence and much more. Even though there are many different factors and challenges that the government organizations need to take in to consideration, for example: copyright issues or information overload. However, if such an emerging tool is used correctly it might improve the lives of individuals on a very large scale by helping them actively participate in decisions that affect them.

Today, most if not all youth/young adults and teenagers, use more than two or at least one type of Web 2.0 application or tool like Facebook, YouTube, etc. If the government of today is able to setup the foundation of this emerging platform in various government organizations, it will be the first step to creating a better and more collaborative future for future generations. A future for the teenagers of today and leaders of tomorrow who have already adopted the use of these technologies and platforms, and the thought of this concept is self-motivating for me.

Even though the SLATES framework is very interesting and provides certain ease of use, it mainly focuses on what organizations can do with social media; for example: search, co-produce/authoring, etc. Another motivating factor here is that instead of only focusing on what organizations can do in terms of operations or how they can perform, I decided to start by broadening and better understanding the use of Web 2.0 by Government organizations. Still having focus on the Research questions: How can government organizations use Web 2.0, I intend to use few underlying questions to support the research question, for example:

- Why use Web 2.0?: understanding the reason for implementation
- How?: in terms of management, maintenance, monitoring, etc.

The general idea is to understand the area of focus and get a clearer overview on the use of Web 2.0 while partially basing it on or using the inspiration of the SLATES framework. The academic contribution of this paper to this field of studies or at least the provided findings that will set the basis for further research is also motivating.

To summarize:

- There is a need for more research on the use of social media by government organizations – a theoretical need.
- Due to the fact that the use of social media is still relatively new, there is a practical need as well.
- I have been fascinated with e-Government for a while now, so my final motivation is my interest in this area of studies.

### **1.3 Thesis Structure**

The structure of this thesis is as follows: An introductory overview is presented in chapter 1 as well as my motivations for undertaking this study. Chapter 2 presents the literature review of relevant prior research conducted, the results from the literature review and a proposed framework for e-Government. Chapter 3 presents the research approach which includes the research method, the research strategy; technique for data collection, the analysis which consists of the key mechanisms that influence the use of social media by government organization, the main and sub categories. Validation and reliability, the role of the researcher and limitations concludes chapter 3. Chapter 4 presents the case analysis starting with the case descriptions, followed by the case analysis results or the findings from each organization and the chapter is concluded by the related findings. In Chapter 5, the discussions of the findings are conducted starting with the discussion of the Key mechanism and main categories of the revised version of the proposed framework followed by the framework itself. The discussion chapter is summarized basing on the revised framework. In chapter 6, the conclusion and implication for this study is present followed by chapter 7, suggestions for further research. The next chapter is 8 where the reference used are given and it is followed by chapter 9 the appendixes. The first sub category in the appendixes is the tables of the concept matrix, followed by a comparison figure of the characteristics traits of web 1.0 to web 2.0. I also had to conduct my interview in two different languages, the both interview guides are presented, followed by the letter I send to the various participants -- it is written in Norwegian.

## **2. Significant Prior Research**

This chapter is essential since it set the basis for this research; the significant prior research addressing the research question is presented here. In order to get a good foundation and better understanding of the existing research on Web 2.0, a literature review is conducted.

This chapter is structured as followed; first the literature review is presented, which mainly focuses on the significant prior research. The next section describes how the article selection was carried out, follow by the analysis of these articles and the limitations within this literature review. The summary of the literature review are presented in section 2.2 which is comprised of the categories of the concept matrix, concept matrix and the results or summary of the literature review.

### **2.1 Literature Review**

In order for me to investigate the significant prior research, I conducted a literature review which can be defined as the use of ideas in the literature to justify the particular approach to the topic, the selection of methods, and demonstration that this research contributes something new Hart (1998) cited in Levy and Ellis (2006). Literature review can conceptualize research areas and survey as well as synthesize prior research, which sets the basis to provide important input setting the directions for future research (Webster & Watson, 2002). Literature review is unique in the sense that it evaluates prior research to fill in the gaps, create a clearer picture or connect the dots to find solutions patterning to a specific phenomenon. The main purpose for this type of review is to create a better foundation and eliminate repetition of fail or incomplete strategies and processes as well as improve or update existing ones to present or future standards. The research question this literature review will provide answers for is: “How can Government organizations use Web 2.0?”

One of the most important factors of a literature review is the sources of information, which are the articles or prior research selections. It is wise that I use a strategy to acquire the relevant articles needed for this review; otherwise the thumb rule of garbage in garbage out may apply here. Failure to increase for example, the search scope, the search term and several other aspects, could lead to a very narrow research with a lot of limitations. In the next section is a presentation of my article selection strategy.

#### **2.1.1 Article selection strategy**

I first started by identifying potential search phrases and while searching some of these phrases, I came across others that was potentially relevant to my research. The selection criteria were strictly based on how relevant the article was in answering my research question: How can government organization use web 2.0. The search phrases that I used were:

**Table 2 Selected Articles**

Search Phrases	AIS		IEEE		EBSCO	
	Search Results	Abstracts &/or Titles review	Search Results	Abstracts &/or Titles review	Search Results	Abstracts &/or Titles review
Government use of web 2.0	517	50	35	25		
Use of web 2.0 in the Government	517*	50	35	25	631	20
E-Government and Web 2.0	500	75	28	25		
Web 2.0 and e-Government	64	50	1			
Web 2.0	1799	50	1853	25		
Social Media	4505	50	2760	25		
Use of Social Media in the government	1373	75	94	50		
Social media and business	3973	25	340	25		
Enterprise 2.0	927	25	218	25		
Social Media and election	122	25	30	25		
Social Media and knowledge management	3530	25	155	25		
Government 2.0	647	50	107	25		
SLATES framework	12	--	28	--		
SLATES and business	12	--	16	--		
government organization use of web 2.0						
<b>Selected Articles</b>	25		14		1	

The table above can easily be explained as follow: let’s use the search phrase Web 2.0 as an example. I search the database AIS and got 1799 results on the phrase Web 2.0. From this search result 50 abstracts and titles were review and the total number of articles selected from the AIS database to be use in the literature review was 25.

The reason for choosing search phrases almost similar is that different spellings or rephrasing of words generated different amount of search results, as you can see in the table above. The exception was the first two that generated the same result in each database. I searched the acronym SLATES but that did not really help, so I had to search the selected articles for each letter in the acronym: ex. authoring. Even though the same results were acquired by re-phrasing certain search phrases, I further sorted the search results by going through keywords. Example of few keywords included: web 2.0, social media, E-government, E-Government, trust, and so on.

The two main databases that I searched was AIS Electronic Library (AISEL) and IEEE Xplore Digital Library. EBSCO Host was partially searched as well, however all off the search results were sorted out in order of relevance. I went through the first two to three pages of

each results looking for titles of relevance to my research and reading the abstracts to determine whether they would be a good fit or not. Majority of the articles were relevant, making it difficult but after a while, it all started to come together making it easier for me to realize what I was looking for. And in the cases that I was unsure, I jumped to the conclusion and/or the reference list to help me make my choice. Some of the full texts from the databases mentioned above were not available which lead me to Google Scholar, Scopus and ISI Web of Science. After collecting a list of potential articles from various databases, the list was merged to eliminate duplicated articles.

A high-quality review is complete and focuses on concepts while covering relevant literature on the topic and is not confined to one research methodology, one set of journals, or one geographic region (Webster & Watson, 2002). In order for me to create such a review, I searched multiple academic databases by manually scanning over multiple titles and reading through relevant abstracts. The list of article selection used in this review is taken from many different geographical locations, types of journals, conference proceedings, publications, etc.: Few of which includes: MCIS, AMCIS, ACIS, BLED, PACIS, MIS Quarterly, ECIS, ICIS, ECU Publications, ISSA, and so on. Reading through most of the selected articles lead me to other relevant articles, mostly because they were cited multiple times in other articles; for example: Osimo, D. (2008), O'Reilly, T. (2007), etc. I also received few extra sources from my supervisor: ex. McAfee, (2006) and Bertot et al. (2011).

### 2.1.2 Analysis

Since a literature review is concept-centric (Webster & Watson, 2002), I started by reading each article and placing the various concepts under different categories. Recurring or relevant concepts gathered from multiple articles are placed under a category that is best suited for them or that they could be identified by. The reason for creating such a concept matrix is to help readers (researchers, etc.) quickly grasp the purpose of the literature review, mainly by identifying key concepts displayed in the matrix. The concept matrix creates a very simple overview and this overview can quickly facilitate me in driving my review in the direction I intend to, basing on the concepts. More importantly, it can help me find a specific article and concept if I need to clarify, compare or differentiate certain aspects during discussion.

Levy and Ellis (2006) suggests a three-step literature review process to guide researchers; they include 1) Inputs, 2) Processing, and 3) Outputs. According to this method, input is my article selection phase which is very essential. Processing is my analysis phase which is basically divided in to six sub steps shown in the figure below and finally the output, which is the result of the review. The three stages of an effective literature review process are displayed in the figure below with a more vivid imagery of the processing stage:

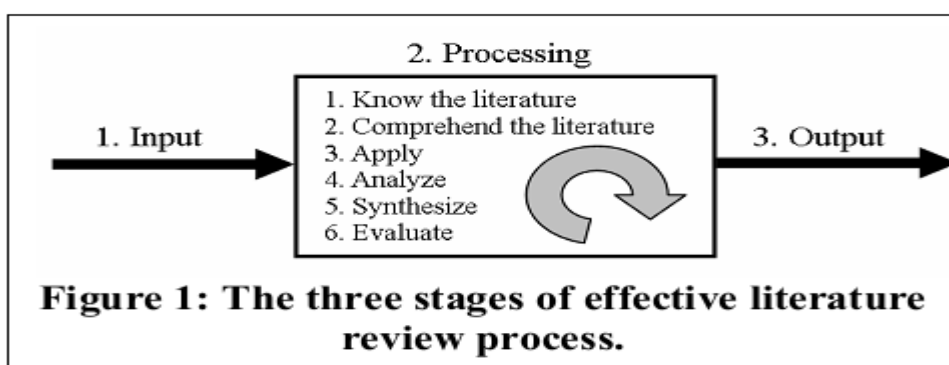


Figure 1 Stages of literature review (Levy & Ellis, 2006)

### **2.1.3 Limitation**

Some of the limitations of this review may include the time frame use to conduct this literature review as well as the workload. I will not probably reach the scope I intend to reach and because of this I might leave out some relevant articles. Another factor is that I'm working on this project alone, even though I have a supervisor, it is still a bit difficult for me to discuss and/or get another perspective that could greatly or partially change the outcome or final results of this literature review.

## **2.2 Literature Review Summary**

The summary of the literature review from the significant prior research conducted are presented in this sub chapter. The main purpose of the literature review was to help me better understand the research area as well as help me in answering the research question, How government organizations can use Web 2.0. The findings presented here are relevant in setting the basis for my proposed framework on how government organizations can use web 2.0. This sub chapter starts with the presentation of the categories of concept matrix, followed by a brief overview of the concept matrix tables, the results from the literature review and a proposed framework based on the literature review.

### **2.2.1 Categories of the Matrix**

I decided to use a concept matrix so that I could reduce the biasness of this study. For example I was able to identify most of the countries the selected articles were taking from, this enable me to limit the amount of articles take from a single geographical location as well as search other areas. By using a concept matrix I was also able to keep track of the various concepts and identified relevant similarities and differences: for example, similar problems presented by different articles or a unique situation experienced by a single organization.

Categories like geographic location and types of articles were placed in the concept matrix to ensure that the selected articles for this research was not just taken from or restricted to a single geographical location and/or types of articles as suggested by Webster and Watson (2002). The categories demand-pull, operations and management are better explained in the literature review results while stakeholders and the transformation area is to help give a better understanding of the participants and the improvement focus area of Web 2.0. The categories and sub categories of the matrix are presented below:

Geographic Location: Asia, Africa, the Americas, Australia and Europe

Demand-pull: Drivers, application, principles and technologies

Types of Articles: Conference proceedings and journal articles

Stakeholders: Citizens, business, government and others (ex. None profit organizations)

Transformation area: Internal, external and relational

Operations: Search, Links, Authoring, Tags, Signals, Ratings

Management: Education, social (Inclusion), services, security, awareness, strategy, accessibility, Participation, Knowledge Management (KM), transparency, trust,

**2.2.2 Concept Matrix**

The tables below shows the main and sub categories of the concept matrix. The headings of the tables were placed here to illustrate the structure of the concept matrix, however the entire tables can be found in the Appendixes -- sub chapter 9.1.

**Table 3 Concept Matrix Table 1**

	Geographic Location					Demand Pull				Type of Articles		Stakeholders				Transformation Area		
Authors	Asia	Africa	Americas	Australia	Europe	Drivers	Applications	Principles	Technologies	C. P.	Journal Article	Citizens	Business	Government	Others	Internal	External	Relational

**Table 4 Concept Matrix Table 2**

	Operations							Web 2.0 Management													
Authors	Search	Links	Authoring	Tags	Extensions	Signals	Ratings	Risks	Education	Social	Services	Security	Awareness	Strategy	Accessibility	Participation	KM	Transparency	Trust		

**2.2.3 Literature Review Results**

**Web 2.0**

Governments have been evolving over time and the next stage for e-Government seems to be Web 2.0, a collaborative form of participation for governments and all other stakeholders (citizens, businesses, non-profit organizations, etc.). Web 2.0 or social media can be seen as an internet-based applications that enables people to interact, collectively create and share content among their networks, facilitating users with the ability not only to access information but also offering them the ability to comment on information already existing in the web sphere, and to publish or republish information (Kongthon, Haruechaiyasak, Pailai, & Kongyoung, 2012).

The inclusiveness nature of “Web 2.0” prefers to use the “term participative” web since it is influenced by intelligent web services that empower users to contribute to developing, rating, collaborating and distributing Internet content and customizing Internet applications (Leahy & Broin, 2009). It also enables citizen participation in a democratic public sphere by fostering



openness, inclusivity and the opportunity to debate issues of common concerns (McGrath, Elbanna, Hercheui, Panagiotopoulos, & Saad, 2011).

Web 2.0 is already being used today by government organizations all around the world as you will see in the results below. However the impact of web 2.0 on the public sector can be seen in four areas: improvement of public sector transparency, policy making – a new form of participation, improvement of public services and finally improvement of knowledge management and cross-agency cooperation (Bonsón, Torres, Royo, & Floresc, 2012).

Even though there are several government organizations adopting Web 2.0, there are also number of constraints which make government agencies reluctant to embrace social media; an example is an a lot of non-academic articles and reports that tend to cover the corporate and business sphere while the discussion on government use of Facebook tend to occur on blogs and government specific websites (Lubna Alam & Walker, 2011). My article selections show that there has been an increase in academic publications on Web 2.0 but there is still the reluctance to adopt.

To truly define Web 2.0 can be challenging because of the many different applications and concepts that it is comprised off as well as the varying differences among them. However to get a better understanding of the differences between a traditional web and Web 2.0, the figure in Appendix 9.2 is presented to give an overview of the comparison showing how the two varies from one another.

Zheng, Li, and Zheng (2010) discussed that all social media has most or all of the following five characteristics: participation, openness, conversation, community and connectedness. Over the past few years this new form of technology has been quickly spreading to the rest of the world. Few of the Web 2.0 technologies include Wiki, Blog, RSS, Aggregation, Mash ups, Audio Blogging and podcasting, Tagging and social bookmarking, Multimedia sharing, Social networking, (Nath, Iyer, & Singh, 2011) (de Kool & van Wamelen, 2008).

### **The use of Web 2.0 in governments**

A web survey showed that Web 2.0 is indeed relevant and has already been applied in the government context (Osimo, 2008). His research discusses different aspects from different countries, how Web 2.0 was used in the government context and few of these concepts included:

- Cross-agency collaboration: for example; using Web 2.0 to support internal policy making-process by using wiki to streamline inter-departmental or inter-government consultation.
- Knowledge management
- Service provision: ex. Disaster management by using blogs, wikis and mashed-up maps to manage natural disaster. Ex: hurricane Katrina, the earthquake in Nijgata (Japan), flooding in UK, and wildfires in Southern California. Other services include online services, feedbacks from citizens on public services to support other citizens' choices.
- Political participation
- Law enforcement: ex. citizens monitoring other citizens on the behalf of governments and civil servants and post these complaints online. Such sites encourage citizens to report, view or discuss local problems. The next example is the police in Canada, the US and UK have being suing YouTube to disseminate video footage, to identify criminals caught by surveillance camera

- Public sector information

The above examples give a brief description on how government organizations are using Web 2.0 and also support the fact that government organizations have already started using Web 2.0.

### **Web 2.0 Advantages and disadvantages**

#### **Advantages**

There are several advantages of using Web 2.0 or social media, some of which includes promoting honesty and transparency to customers and business partners, provides competitive advantage (Singh, Davison, & Wickramasinghe, 2010), a similar concept that can be applied to government organizations.

There are several features of Web 2.0 that support the fulfillment of human needs (Peedu & Lamas, 2011), for example: identification – humans need to be seen in a way by significant others, stimulation – strive for personal development, skills, etc. and evolution – humans enjoy talking and thinking about the good old days and Web 2.0 supports this.

Other benefits of Web 2.0 includes: time saving, wisdom of the crowds, crowdsourcing solutions and innovation, co-production or joint development by the government and the public, democratic participation and engagement, rapid sharing of collective intelligence, customizability, transparency and openness (Bertot, Jaeger, & Hansen, 2011) (Patten & Keane, 2010).

#### **Challenges**

Whatever the advantages are when it comes to any concept, there are always few disadvantages or challenges. For example: age, occupation, peer pressure, privacy concerns, untrustworthy content, lack of accessibility (Leahy & Broin, 2009), are all great challenges and concerns of Web 2.0.

According to Tsui, Lee, and Yao (2010) Web 2.0 is tied to challenges likes:

- Web Savvy: digital divide separating users from nonusers on the basis of income, social class, age, access, race,
- Web Democracy: all opinions and content are equally valuable; this concept is misguided and undermines the notion of expertise.
- Web legal: online content and masups – legal problems concerning copyright of content may arise.
- Web Firewall: there could be problems safeguarding content and information.

Web 2.0 provides a range of opportunities but there are numbers of potential risk and drawbacks like authentication, regulatory and equitable issues, offensive content and censorship, public disclosure, information overload (Tsui et al., 2010) (L. Alam & Lucas, 2011). Due to these concerns, a great need for management, strategy, monitoring and so on are needed.

#### **Stakeholder**

I chose to introduce stakeholders in this sub chapter because most of the prior research suggests that various organizations are using Web 2.0 basing on the needs of the organizations and the stakeholders. A stakeholder can be defined as any group or individual who can affect or is affected by the achievement of the organization's objectives (Vaast, Lapointe, Negoita, & Safadi, 2013). Stakeholders play a key role since they are the ones using or providing these services. Singh et al. (2010) discussed that Web 2.0 technologies respondents indicated it was

a major innovation in managing relationships with its stakeholders because it promotes interaction, collaboration and networking.

Social media has created a new trend of interaction among stakeholders, a trend that is a bit different from the traditional web. Linders (2012) presents the citizen co-production perspective in the age of social media which talks about three government types:

- Citizens sourcing (C2G): ex. crowd-sourcing and co-delivery -- citizens report, provide information to the government and so on
- Government as platform (G2C): ex. ecosystem embedding -- open book government, increased transparency
- Do it yourself government (C2C): ex. Self-service -- self-monitoring, citizens monitoring citizens; more like a neighborhood watch community.

The prior research here shows that stakeholders mostly from the demand side can become more active and have better interactions with the government.

### **Transformation Area**

How government organizations intend to use Web 2.0 will also be determined by a specific transformation area. The sub chapter transformation area is present to introduce the various critical transformation areas that government organizations need to be aware of when using Web 2.0. Three critical transformation areas of e-Government discussed by Ndou (2004) are:

- Internal: the use of ICT to improve the efficiency and effectiveness of internal functions and processes of the government
- External: improved transparency to external participants while giving access to information collected and generated by the government.
- Relational: focuses mainly on vertical and horizontal integration of information and services, example; virtual agencies, cross agencies,

An example discussed by Singh et al. (2010) is that the implementation of Web 2.0 service could be seen as a new communication channel with an internal component supporting employees networks and team work, as well as an external component for providing a platform for customer/users opinions. The transformation area could play an important role on how government organizations can use Web 2.0

### **Web 2.0 Demand-Pull**

#### **A conceptual web 2.0 framework**

Part of my proposed framework on how government organizations can use Web 2.0 is based on a conceptual Web 2.0 framework presented by Kim, Yue, Hall, and Gates (2009), in which they discussed the technology push and the demand pull of the Web 2.0 paradigm. This conceptual Web 2.0 framework is displayed below:

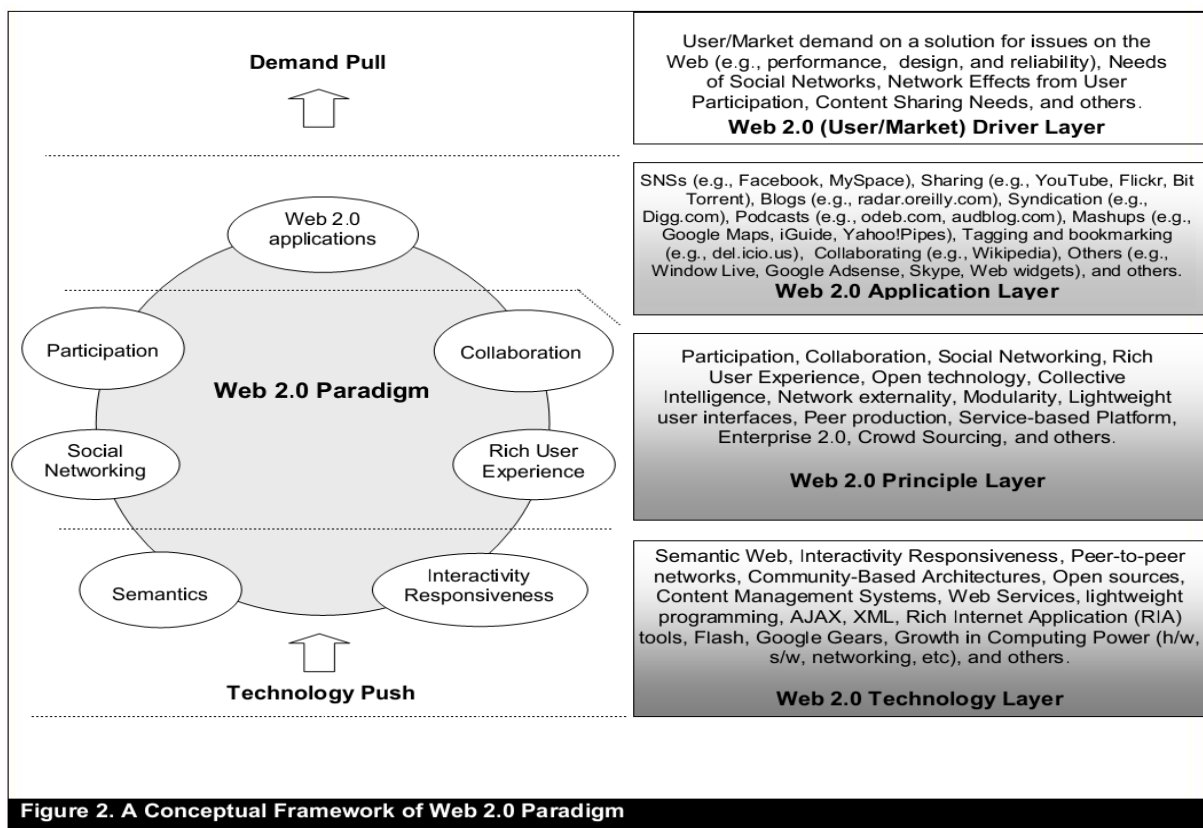


Figure 2 A Conceptual Framework of Web 2.0 Paradigm (Kim et al. (2009))

A brief summary of this conceptual framework discussed by Kim et al. (2009) is that:

- Web 2.0 technology layer enables the technological concepts that provide structure and supports the Web 2.0 principle.
- Web 2.0 principle layer are common fundamental characteristics observed from current Web 2.0 platforms
- Web 2.0 applications layer is about the Web 2.0 Rich Internet Application (RIAs) that are implemented at the lower layer principles by using enabling technologies.
- And finally the Web 2.0 driver layer refers to the market/social/user driving forces that pull the fundamental shift in technology for example: Online business networks, online communities and individual online behavior.

de Kool and van Wamelen (2008) stated that when we focus on the characteristics of Web 2.0 we can conclude that Web 2.0 has the potential to make the goals of e-Government accessible. And the conceptual framework presented by Kim et al. (2009) suggest several layers how the use of Web 2.0 which is very relevant and plays one of the key roles in this study.

A more detailed description of few of the elements within the layers presented in the conceptual Web 2.0 framework is discussed below. However several other prior researches were also coded under the category of the Demand-pull as well as two other categories discovered from the literature review, namely: Operations and Management.

### Web 2.0 Drivers

I introduced that Drivers layer because it is one of the most important in establishing why government organizations use Web 2.0, their reasons for having a presence on social media channels. By understanding the various concepts associated with the reasons why government

organizations use Web 2.0, I should be in a position to understand and answer the research question. The most common reason for adopting Web 2.0 from six case present by Singh et al. (2010) is the need for engagement and innovation, increasing brand awareness, reducing costs of advertising, telling people why they exist and what they can do for their business partners and customers and for finding out what their customers want. Understanding the drivers, the need to adopt Web 2.0, is a major step taken by organizations because it is basically the phase in which they try to understand why they should adopt or use Web 2.0.

The Australian government use of Facebook pages participation varies across agencies some of which are being used for; announcement purposes, informing, involving type of online engagement, communication, compliance, recruitment, promotion and engagement and crowdsourcing (Lubna Alam & Walker, 2011). This indicates that different organizations have different needs, hence different drivers. Few other drivers may include; being part of a social group of common interest, finding out more information, making friends, obtaining user opinions on products, reading opinions and recommendations of others, finding out job or career information (Leahy & Broin, 2009).

In a survey carried out among Top US political bloggers, their reason for blogging seemed to be providing alternatives to mainstream media outlets or to influence public opinion (Larsson & Moe, 2011). Several services mentioned by de Kool and van Wamelen (2008) includes:

- Mobilization: new ways for participation – reaching voters through YouTube videos, tagging by people to mark unsafe locations on a digital map
- Meeting: virtual platforms – ex. MySpace and Second Life
- Supporting: provision of services - offering digital maps with information about locations of public organizations, ex. Hospitals, libraries, schools, etc.

Other services in different area or government organizations include:

#### *Road Safety 2.0*

Every year there is a huge amount of casualties from road accidents and there is a demanding need to reduce this number or eradicate this problem totally if possible. In order to do so, it is necessary to understand the acceptance or non-acceptance of traffic rule changes by road users before they are implemented (Fink, 2010). Web 2.0 provide such opportunity, it enable the community to collaborate electronically with the government in developing road safety strategies and policies, ones that they (the population) might respect (Fink, 2010).

Categories that describes online civic engagement will include (Fink, 2010):

- Collaboration: people working together on projects through Wikis, crowdsourcing ex. Government and public
- Communication: using Web 2.0 tools to alert the public about road hazards
- Content development: generating news and delivering news through websites, RSS, etc.
- Podcasting: developments affecting roads safety.

Fink (2010) went on elaborating that the purpose of such a road safety 2.0 should not be about reducing the speed but about changing the attitudes on the road by engaging via Web 2.0 as well as emphasizing road safety, demonstrating road safety knowledge, raising public awareness, engaging the public or being the major information source.

### *Education*

G. J. Baxter, Connolly, Stansfield, Tsvetkova, and Stoimenova (2011) discuss why educators have become attracted to using Web 2.0 tools, namely wikis, blogs and online forums and how students benefit. Wikis collective ownership and authoring allows students to participate in group assignments, classwork, and so on. Few examples presented by G. J. Baxter et al. (2011) included cases of:

- A language course where blogging was used to promote student interest, motivation and confidence in writing.
- An online forum designed to allow medical students to reflect on and communicate with other medical students about their experiences.
- The results from their review showed that students who participated in an online forum for an undergraduate psychology course performed better in the course and their exams than those that didn't.

To conclude a Web 2.0 implementation framework was suggested by G. J. Baxter et al. (2011), the key categories being: planning, support, development and implementation.

### *Health*

Electronic Healthcare can be defined as the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the internet or related technologies (Kühne, Blinn, Rosenkranz, & Nüttgens, 2011). There are services or platforms and portals being used globally by patients to inform themselves and discuss their disease with others, treatments or other related medical or nonmedical topics (Kühne et al., 2011). The concept behind the utilization of Web 2.0 technologies in the health area is to enable health care consumers, caregivers, patients, health professionals and biomedical researchers through social networking, openness, and collaboration.

The results presented here from the prior research shows that, the drivers or reason why organizations use Web 2.0 is important in answering this research question. And the results also suggest that different government organizations have different drivers, even though there are similarities at times. The next step is to understand the Web 2.0 applications.

### **Web 2.0 Applications**

I introduce the application layer because it supports the research question: how can government organizations use Web 2.0 in relation to the different types of applications or social media channels that the organizations can use. There are several Web 2.0 applications, one of the factors that increase the complexities of Web 2.0. Due to the varying factors and functionalities of these applications, each is placed under a category based on its functionality as shown below for example: social networking sites ex. Facebook, sharing ex. YouTube.

*Social Network Site (SNSs) Facebook, MySpace, etc.:*

Facebook

Lubna Alam and Walker (2011) investigated six Australian government Facebook pages – Australian Tax Office (ATO), Australian War Memorial (AWM), Department of Defense sites for Army, Navy and Air Force and Lastly Australia Tourism.

The analysis of the post on these pages fell into five main categories: giving information, requesting information, positive comment, negative comments and miscellaneous – meaning anything not fitting into the above four categories (Lubna Alam & Walker, 2011).

The purpose of the Australian Tax Office page appears to encourage users to use the electronic tax systems (e-tax) or tax compliance; for example series of tutorials about the e-tax system, some advice on tax issues and daily reminders that the deadline for personal tax returns is approaching (Lubna Alam & Walker, 2011). While the purpose of the AWM is to promote collection and share history and the defense sites (Army, Navy and Air force) is purposely meant to communicate effectively with members of the community, serving members and specifically to recruit (Lubna Alam & Walker, 2011). The tourism page is purposely meant for user to discuss their experiences in visiting Australia and to ask questions. As we can observe here, the Australians basically created specific services tailored to the needs of the demand chain or users while providing required services for the supply chain.

S. L. Alam, MacKrell, and Rizvi (2012) also discussed that the tourism Australia Facebook page, enables them to upload videos, photos and stories every day. One of the main purposes of this page is that the Australian tourism needed to have a presence. The participation on this page is strictly monitored by an employee every fifteen minutes, to manually remove undetected profanity that Facebook filters missed.

Another common use of social networking sites today is that human resource professionals are using social networking sites for example recruiting or hiring new employees, the most relied on social networking site for recruiting is LinkedIn (Leahy & Broin, 2009).

#### *Sharing (YouTube, Flickr, BitTorrent)*

A photo sharing application like Flickr promotes several advantages. For example photo-sharing applications, can be used to digitized the pictures from the family albums, be uploaded, accessed, commented upon, downloaded and sometimes even edited or transformed into various types of custom keepsake items like t-shirts, mugs or mouse pads (Kongthon et al., 2012). Government organizations can also use these applications to store photos that can easily be accessed by other stakeholders. Photo sharing applications create a unique perspective on how government organizations can interact with their users/participants. The most recent photo sharing application is Instagram.

Another example of a sharing application is YouTube. For example the YouTube videos about the presidential candidates in the United States (de Kool & van Wamelen, 2008). Few of the benefits included; increasing the potential for candidate exposure at a low cost or no cost, providing lesser-known candidates with viable outlet to divulge their message and allowing campaigns to raise contributions and recruit volunteers online (Stieglitz, Brockmann, & Xuan, 2012). A major challenge is the ability to control the image and message of the candidate (Stieglitz et al., 2012).

#### *Blog*

##### *Twitter*

As a micro blogging service, Twitter can be understood as a miniature version of the regular blog (Larsson & Moe, 2011). A tweet is equivalent to 140 characters and each tweet is shared with a network of followers, however followers are not automatically followed by those they are following (Larsson & Moe, 2011).

The successful employment of the internet during the 2008 Obama US presidential campaign left several claiming that social media applications such as Twitter, provide new opportunities for online campaigning (Larsson & Moe, 2011). Few examples of the use of twitter are; an

American student who was jailed in Egypt and used Twitter to signal distress, the messages sent by a passenger on the US Airways plane that crashed into the Hudson river, etc. (Larsson & Moe, 2011)

Social media such as twitter has shown potential to be an effective tool for Thai citizens to obtain and disseminate up-to the-minute information (Kongthon et al., 2012). They were also able to analyze and classify the various tweets send during the Thai flood into five different categories:

- Situational announcements and alerts: Emergency warnings from authorities advising citizens to evacuate areas, etc.
- Support announcements: Free parking; free emergency survival kits distribution, etc.
- Requests for assistance: Assistance request, ex. Food, water, medical supply
- Requests for information: General inquiries: telephone number for relevant authorities
- Other: Other messages like general comments, complaints, opinions.

After going through few of these examples, one can start to see how micro blogging can come in handy, however Larsson and Moe (2011) also categorized the use of Twitter identified into four categories, namely: Daily chatter, post regarding daily events and thoughts; Conversations using the @ character; Sharing information where URLs are distributed via the post and Reporting news. Another positive aspect of Twitter is that it allows traditional journalist as well as citizens reporters to provide instant situation reports (Kongthon et al., 2012). There are also few disadvantages of Twitter like messages using wrong (#) hashtags, misspelled, left out hashtags making it harder for others to follow, (Larsson & Moe, 2011).

Normal blogs are also still being used also and today due to the continuous development, many blogs now support multimedia content; for example: sound, video, animation and graphics (G. J. Baxter et al., 2011). All of which is very useful when tailored to the needs of specific supply and demand chains.

Few challenges of blogs and wikis presented by Freeman and Loo (2009) are:

- Ensuring that the comments and contribution are not monopolized by a vocal minority
- Avoiding information overload and keeping the discussion on the topics being discussed
  - Feedbacks and dialogs should be encouraged
- Facilitating civilized and balanced discussions representing the diversity of constituents

### *Syndication*

Content syndication consists of technologies that facilitate automatic update of content; text, graphics, audio and video formats (Freeman & Loo, 2009). Examples of content syndication includes: Real Simple Syndication (RSS), Atom, etc. RSS web feeds provides an effective way to disseminate and share information with all stakeholders of concerns (Freeman & Loo, 2009); ex. Twitter.

### *Podcast & Video casts*

Video casts can be defined as an online delivery of video on demand or video clip content either as files for downloading or streaming video feeds while podcast is strictly audio-based (Freeman & Loo, 2009).



### *Mashup*

Mashups are applications that take data and combine it either with other data or other web services to create something new (Bonsón et al., 2012). Mashups could be very useful since different government organizations or departments within an organization may have different needs, combining services may save time and cost. One example of a mashup is how the Los Angeles County was able to enable the public to identify and locate various county services by using the services Locator; a cartographic information from Google Maps services to provide a geo-spatial representation of the L.A. county information and services (Freeman & Loo, 2009). Google mapping service also helps users to get driving directions to the locations presented in the service locator (Freeman & Loo, 2009).

### *Collaborating (Wikipedia)*

Wiki is a simple yet powerful Web-based collaborative authoring (or content-management) system for creating and editing content (Murugesan, 2007). Wiki can be effective in teaching and learning, effective as a collaboration tool if there is socialization among participants, etc. (Nath et al., 2011). Few of the advantages include (Murugesan, 2007):

- Asynchronous contribution by group of people – for example: experts, peers, employees, users, etc. – who might be located in different geographic locations.
- Excellent means to annotate information or discuss evolving issues
- Higher communication efficiency and productivity as compared to e-mails
- Diverse individuals creating a collaborative work
- Centralized, shared repository of knowledge and documents

The literature review shows that there are many different Web 2.0 applications with different capabilities and forms of communications. Singh et al. (2010) discussed that it was established that specific Web 2.0 technologies better serve particular industry sectors, such as LinkedIn for professional organizations and twitters for dealing with younger clients. So choosing the right application to suit the needs of an organization is highly recommended. There are multiple applications and organizations need to select the right application(s) that best promotes their interest and goals.

To sum up, Chang & Kannan (2008) discussed in S. L. Alam, Campbell, and Lucas (2011) that the Web 2.0 environment can be divided into three categories: tools that are communication focused, interaction focused and service focused. Selecting the right application can determine whether the organization reach their intended goals or not.

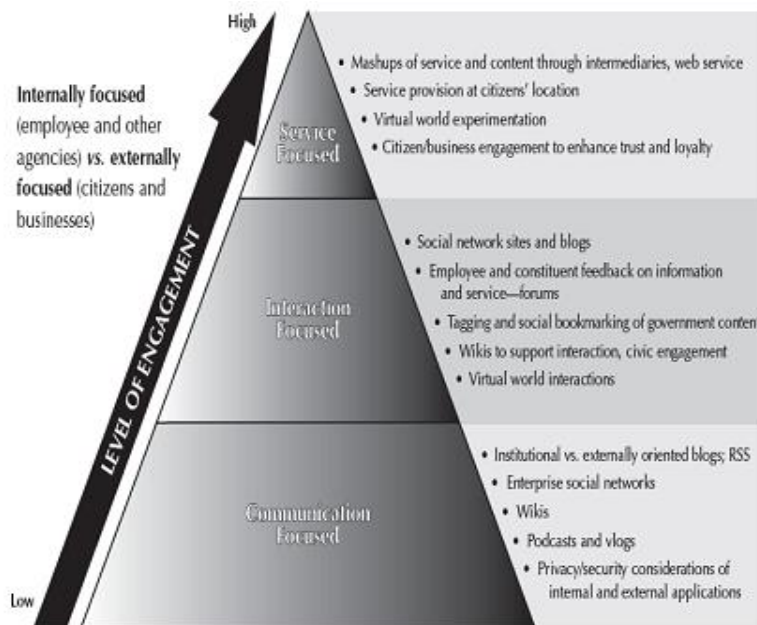


Figure 1: A framework for government's use of Web 2.0 (Chang & Kannan 2008, p.19)

Figure 3 A framework for government's use of Web 2.0 (S. L. Alam et al., 2011)

### Web 2.0 principles

The main reason for introducing the principle layer is that it focuses on the common fundamental characteristics observed from the use of Web 2.0 applications for example: participation, collaboration. By understanding the common fundamental characteristics observed from using Web 2.0, government organizations should be in a better position as well as understand how to use Web 2.0 generally.

### *Participation*

Websites are designed to further enhance user participation, from a traditional centralized platform to a decentralized platform that allows end-users to participate in web 2.0 applications/services; for example, Digg.com provides news feeds but also allows users to contribute news (Kim et al., 2009).

One of the key strategies discussed by Charalabidis, Gionis, and Loukis (2010) when it comes to participation is that, government administrations should take the first step towards increased involvement of citizens by going to the web locations each group is using for interaction, instead of expecting the citizens to move their activities onto the official government spaces. Taking such an initiative is not as easy as it sounds because it is going to need a lot of planning, strategizing, managing, trial and error runs, and so on. One approach that could be used is the honeycomb framework of social media. The honeycomb framework of social media is meant to help decision makers to overcome a lack of understanding regarding the use of social media functionalities (Senadheera, Warren, & Leitch, 2011). It is based on seven functional building blocks namely: identity, conversation, sharing, presence, relationship, reputation and groups. It enables user to describe and examine certain facts patterning to social media, for example: Identity – the extent to which users reveal themselves (Senadheera et al., 2011). By understanding to what extent users are willing to participate in

various aspects, government will be able to better strategize and improve on their point of focus or areas that need extra attention.

### *Crowd-sourcing*

Governments have been evolving over time, in the 1960s government focused on the need to keep information -- control, whereas today there is a need to co-create -- crowd-sourcing (Nam, 2010). Nam (2010) further discussed that in order to move toward towards a wiki-government, civic-sourcing is essential because it encourages many concerned citizens to participate and produce high quality information and to avoid mob-sourcing, since it is negative and provides misleading information.

Crowd-sourcing have great potential but there are few challenges when it comes to management, some of which includes: managing submission, loss of control, quality of the ideas, creating trust (Jain, 2010).

### *Collaboration*

Large corporations and government agencies are using collaborative tools such as wikis to benefit their organization by enabling their employees to reference and to collaborate with other members of the organization (Kim et al., 2009). For example, Cisco uses Web 2.0 technologies to collaborate and connect with customers, partners, communities and employees (Singh et al., 2010). While SAP recently declared their direction to incorporate blogs, wikis, YouTube and so on into their enterprise product (Leahy & Broin, 2009).

Even though this form of collaboration seems to be advantageous, there are several challenges. Recent papers on crowd sourcing highlight some of these challenges this form of collaboration manifests; few examples included: motivating users, reaching a large user base and quality of contribution (Lubna Alam & Walker, 2011).

### *Social Networking*

Social networking is an important form of user participation in which the goals are to build and maintain social connections for satisfying social, career and personal need (Kim et al., 2009). Staying connected and getting feedbacks is very important in every organization, example: knowing who to contact locally or in other agencies, who is working, etc. Social networking is capable of fulfilling such needs and more.

### *Rich User Experience*

Rich user experience is the ability of the web to deliver full-scale GUI style applications to client, making it easier to interact, share and access web content (Kim et al., 2009).

The principle layer provides few suggest observed from the common fundament characteristics from the use of social media, how government organizations could direct their use of social media. The next layer is technology.

### **Web 2.0 Technology**

The main reason for introducing the technology layer is that, it should help government organizations better understand the underlying technologies that supports Web 2.0. And in cases that they may want to further develop or integrate several social media channels with their systems or further develop to suit their needs, should be a possibility. Few of the concepts and technologies associated with Web 2.0 are briefly described below, for example semantic web, interactive responsiveness and so on.

### *Semantics web*

A semantic web is a web that has a consistent terminology standard and uses a logical system to organize, manage and link data together in a way that benefits the users of the system and improves interoperability between systems (Kim et al., 2009). Semantic web is also a concept that organizations can use to better understand Web 2.0.

Few development approaches includes: AJAX, Flex and Google Web Toolkit.

### *AJAX*

AJAX is relatively new approach to creating application with an enriched user interface, meaning highly interactive and more responsive (Murugesan, 2007). It relies on several technologies like: XHTML or HTML, cascading style sheets (CSS), JavaScript and XML.

### *Flex*

Adobe Flex is an application development solution for creating and delivering cross-platform Rich Internet Application (RIA) on the web (Murugesan, 2007).

### *Google Web Toolkit (GWT)*

GWT is an open source Java development framework that makes it easy to develop and debug AJAX applications.

Web 2.0 development tools for blogs, wikis, mashups, etc. are (Murugesan, 2007):

- *Blog* software also called blogware is designed to create and manage blogs. The most commonly used are Movable, WordPress and Blogger.
- *Wiki* software or wiki engine runs a wiki system, usually implemented as server-side script that runs one or more web services with the content generally stored in a relational database management system.
  - MediaWiki and TWiki are two of the most used open source wiki applications
  - While Socialtext, JotSpot and Atlassian are commercial.

### *Mashup*

Few examples of mashup tools includes: Above all studio, ActionBridge, Dapper, DataMashups, RSSBus.

The examples above are just few of the many technologies and concepts that could be used to further develop or integrate Web 2.0 with other systems or services. Wattal, Schuff, Mandviwalla, and Williams (2010) stated that there is a large and varied collection of technologies with different properties and capabilities, with specific technologies containing different attributes that afford different behavior. So understanding the underlying technologies could also be a great challenge basing on the variation and the complexities of the different technologies. Wattal et al. (2010) stated that it is still unclear which one of these attitudes lead to increase involvement, for example: the commenting or ratings feature on YouTube, which one of the two increases participation. This leads us to the next main category Operations.

## **Web 2.0 Operations**

The category operations is introduce to better explain what types of activities can be carry out on the various social media channels. McAfee (2006) presented the “Web 2.0” technologies as “Enterprise 2.0” to focus on specific platforms and knowledge workers. In order to better explain the concept of Enterprise 2.0, he used the acronym SLATES to indicate the six components of Enterprise 2.0 technologies. They are:

1. **Search:** keyword search for the quick retrieval of information
2. **Links:** guide to which information is important and provides structure to the given content. The ability to build links between the information.
3. **Authoring:** the ability to constantly create and update or remix information like blogs or wikis, for a broad audience. Individual or group authorship.
4. **Tags:** the categorization of content by a single one word description that can easily be search.
5. **Extensions:** is the automated categorization and pattern matching by use of algorithms to users. For example: if you like that, then you will like this. Ex: Amazon
6. **Signals:** the use of RSS feeds to alert users about updated or new content.

I placed the SLATES acronym under the Web 2.0 operations because it better explains what organizations can do with these applications, the various operations they can carry out, for example: search, tag, comment or authoring.

According to bin Husin and Swatman (2010), the six technology components of the acronym SLATES can be expressed as a four-category model known as the 4Cs approach:

- **Communication:** ex. discussion forums, blogs
- **Cooperation:** ex. media sharing – create, publish and share files like pictures and videos with tags, comments via web based applications.
- **Collaboration:** ex. wikis, etc.
- **Connection:** ex. social networking

The SLATES acronym is a very important framework, however when it comes to government organizations and the many different forms of participations that it requires, there are many other operations that should be added to the list, for example: views, comments, ratings/votes, etc. (Charalabidis & Loukis, 2011).

### **Web 2.0 Management**

It is very important to remember that changing the organization's culture takes some time, and in order for Web 2.0 activities to take effect; there is a great need for openness in the organization, trust, flexibility, collaboration, different kinds of awareness, etc. as well as strong leadership (Seo & Rietsema, 2010). Basing on these facts, there is a need to manage and/or monitor various activities some of which includes: security, social risk, ethical problems and so on. There are several management factors that government organizations need to take into consideration when it comes to the use of Web 2.0, few of which includes:

#### *Security*

The issues of security, cybercrime, vandalism and hacking, copyright and other problems associated with the internet are concerns that require serious attention (Singh et al., 2010). With a high level of this type of participation, government organization should even be more concern because every individual may have his/her own agenda. A step that could be taken to ensure or minimize such treats is that government organizations provide a high level of security awareness to prevent potential hazards, such as damage to their reputation through unprofessional conduct, loss of control, cyber mobbing, social engineering and malware attacks (Oehri & Teufel, 2012).

Security concerns of companies using social media seems to be; security concerns about viruses and malware, confidential data leakage/theft, network vulnerability, targeted attacks, loss of productivity, reputation damage, or that the benefits are not measurable (Oehri & Teufel, 2012) (Raisinghani, 2012). While the weakest links in the IT security chain seems to be the employees, smart phones, laptops, PC workstation, Network, removable media, tablet

PC, etc. (Oehri & Teufel, 2012). Attacks from malware and viruses such as Trojan and spyware could lead to down time and cost to restore (Raisinghani, 2012), this is why it is very important to manage or prevent these treats from happening.

There is a growing concern around the capability of the organizations to comply with legislation relating to privacy, data protection and legal discovery, some of which can be blame on externally hosted systems and often beyond the direct control of the organization (Hardy & Williams, 2010). For example: published information stored on employee's personal blogs, cloud server – Dropbox. Another concern is social risk, for example: employees response is taken to imply formal policy (Fink, 2010).

Hardy and Williams (2010) discussed how failure to manage and protect digital information assets exposes the organization to significant business and information risk. Some of which includes:

- Continuity risk - risk associated with the availability of information and its backup and recovery.
- Compliance risk - not being able to comply with required laws and regulation, ex. Data protection.
- Audibility risk - not being able to verify and obtain assurance about the integrity of the information, ex. Incomplete document
- Reputation risk – reputation damage due to the release of confidential or personal information, accidentally or deliberately.
- Intellectual Property risk – loss of rights in literary and artistic creations
- Content risk – loss of information assets as they are re-used, re-purposed and re-combined.

Hardy and Williams (2010) went on discussing that information security requires a greater emphasis on information mapping and on understanding who is creating what information, on behalf of whom and for what purpose. In order to truly achieve this, government organizations will need to constantly monitor these Web 2.0s services, mainly the participation aspects. Social media security culture must also be part of the overall organizational culture (Oehri & Teufel, 2012).

Oehri and Teufel (2012) also suggested four security management steps:

- Diagnosis: Diagnosis of social media security culture
- Planning: Definition of target culture, target groups, instruments, measures
- Implementation: Project management
- Evolution: Goals reached and lessons learned

### *Ethical Problems*

Code of conduct is very important for public servants, especially when it comes to web 2.0. L. Alam and Lucas (2011) presented an ethical triad for professional public servants namely the three states they can operate as: official, professional and personal. They can operate as an officer of the government when caring out official duties as well as they have the right to act as a private citizen. Even though they have this right to act as a private citizen, whatever they say or do could be seen as an official rule or regulation and due to this some level of professionalism needs to be applied. The duty of these public servants is to distinguish between when they are acting as officials, professionals and personally. For example leaking information received under official capacity as a private citizen could be problematic (L. Alam & Lucas, 2011).

### *Social Inclusion*

Some users are visually impaired, have aging impacts disability (Leahy & Broin, 2009), the question here is how can they be included, are there measures taken to meet their needs, and so on. Larsson and Moe (2011) stated that blogs and similar online applications such as public discussion forums could be problematic because of problems like exclusion and others, heated arguments, a great deal of anonymity. Excluding certain groups of individuals seem to be a bit biased and organizations need to manage such situations.

### *Awareness*

A survey conducted showed that it is critical for visually impaired respondents, social networking sites like Facebook, MySpace, are much less used as compared to sighted respondents (Leahy & Broin, 2009). The respondents without visual impairment have very strong reasons for using social networking sites, for example finding out information about jobs and career development, making new friends, etc. while those that were visually impaired showed weaker interest (Leahy & Broin, 2009). This problem can easily be related to social inclusion, accessibility, etc. but it also has to do with the government's ability to make aware and involve all citizens.

### *Accessibility*

Few accessibility challenges may include: videos with no soundtrack or text transcript alternatives, inability to determine content on visual elements (ex. No caption, title or alternative text on image), complicated – wrongly marked up data tables that confuse screen readers, inability to control interactive elements such as audio and video (Leahy & Broin, 2009).

### *Strategy*

Fink (2010) stated that the new internet enable technologies allow unpredictable interactions between unexpected stakeholders producing unplanned results, none of which is the intended outcome. A strategy that was proposed is that small pilot projects given to staff or a small group with flexibility to experiment could be used as a starting point.

One of the key strategies that was realized from the Thai Flood was that the top users of the flood or disaster related events was the government or private organizations but most importantly there were multiple sources and because of this citizens were able to choose and get the most up-to-the-minute information (Kongthon et al., 2012). For example: thaiflood and kpoockdocom, SiamArsa and GCC\_111 were among the top choice in Thailand Flood disaster 2011. Strategies are a necessity when it comes to how government organizations can use Web 2.0.

### *Transparency*

Transparency emphasizes on the reduction of information asymmetry between organizations and its consumers, with the main aim of gaining the trust of external stakeholders (Yang, 2012). Liu, Zhou, and Liu (2012) discussed four stages for transparency improvement, namely: Increase data transparency, Improve open participation, Enhance open collaboration and realize ubiquitous engagement. Transparency is needed to establish trust between the organization and its participants.

### *Trust*

Trust refers to the belief that the trustee will act to fulfill the trustor's expectations without exploring the trustee vulnerabilities (Yang, 2012). However, trust issues are mostly related to

trust in the technology and trust in the government (Yang, 2012). Pee (2012) presented a social media information credibility model with three main hypothesis (information quality, source credibility and majority influence) positively related to trust of information on social media and minor hypothesis (personal involvement and prior knowledge) that affect the three main hypothesis. Trust is one of the key issues when it comes to how government organizations can use Web 2.0. Users need to trust the information that is given by the organizations.

### *Opinion Mining*

Opinion mining can be defined as the computational processing of opinions, sentiments and emotions found, expressed and implied in text, a concept used by firms to enable them to analyze online reviews and comments entered by users (Charalabidis & Loukis, 2011). When government organizations starts using Web 2.0, there are several users that will be participating and opinion mining can be used to improve the level of participation.

### *Knowledge Management*

Knowledge management (KM) is the process through which organizations generate value from the intellectual and knowledge-based assets (Nath et al., 2011). Nath et al. (2011) when on stating that the differences between traditional KM tools and Web 2.0 KM is that, Traditional KM tools, such as expert systems, are systems that essentially capture the explicit knowledge of a single expert or source of expertise in order to automatically provide conclusion or classifications within a narrow problem domain. While Web 2.0 KM enables knowledge communities to share knowledge by enabling individuals and groups to arrive at their own conclusions. For example: through Wiki multiple people with different expertise and different roles can interact socially and work towards a common goal.

Knowledge management activities which includes knowledge generation, codification, transfer and realization, poses unique challenges and in different scopes of KM (Nath et al., 2011).

Few examples include (Nath et al., 2011):

- Generation: Collaborative editing by individuals not necessarily collocated, tutorials by experts on wikis for training purposes, etc.
- Codification: Storing generated knowledge, tutorials accessible to all individuals working in an organization, etc. for example: audio file, video tutorials, podcasting, best practices from different project groups,
- Transfer: Accessing, gaining, transferring informal and appropriate knowledge from wiki, etc.
- Realization: Using generated knowledge to train one self, etc.

The three different organizations investigated by Nath et al. (2011) used Wiki as their primary KM tool even though few of them added some extra functions as well as other Web 2.0 applications. For example: RSS feeds, Facebook, etc. With all of this information and knowledge, there is a chance of information overload. Information overload can be better managed by a range of different services (Polaschek, Zeppelzauer, Kryvinska, & Strauss, 2012): publication, subscription, distribution, personalization and collaboration. For example: adopting a single subscription interface for matching new content that allows multiple query languages.

Social media can be used to support knowledge management as discussed in Zheng et al. (2010) for knowledge evolution, knowledge use/reuse and knowledge sharing. Social media



allows users to create their own ways to share information: for example, one can choose to follow a certain part of people social media content and also allow a certain number of people to follow theirs as well as choose the format – text, audio, video, images, etc. It also enhances the people knowledge sharing motivation level. And for government organizations to truly understand how they can use Web 2.0, they have to be able to manage the knowledge acquired through experience from monitoring their social media channels, through participating with stakeholders and so on.

### Summary of the Literature Review

To see how I arrived at these numbers, please check footnote<sup>1</sup>.

In order for me to not select every article from a single geographical location or a single type of articles (Webster & Watson, 2002), tables 5 and 6 below shows the variation. Each geographical location or case presents a unique perspective, problems, solutions, etc. and such variation enabled me to better comprehend the diversity when it comes to government use of social media. With 34.9% each, the Americas and Europe seems to have the highest amount of selected articles and/or cases presented and Africa with the lowest amount of 2.3%. Africa having the lowest amount among the continents could be understood in the sense that most African nations or developing countries are still in their early stages of e-Government implementation; poor IT infrastructure, lack transparency, accessibility, awareness, and so on.

**Table 5 Geographic Location**

Geographic Location					
	Asia	Africa	Americas	Australia	Europe
Percentage	16.3%	2.3%	34.9%	18.6%	34.9%

Journal articles seemed to have the highest amount with a percentage of 65.1%, followed by conference proceedings.

**Table 6 Types of Articles**

Types of Articles		
	Conference Proceedings	Journal Article
Percentage	34.9%	65.1%

Stakeholders and the transformation area play a very important role in the use of Web 2.0 by government organization. By identifying the various stakeholders, government organization will be in the position to provide services that suit their needs. In the table below; citizen is a stakeholder, however citizens are between the ages of 0 (days old) to pensioner. They

<sup>1</sup>

Well, I used a very basic method for coding the data, for example: most articles discussed or presented cases from many different countries. An article discussing the Australian Tourism Facebook page is placed under the geographic location of Australia. However, several articles discussed multiple cases which I placed under multiple geographical locations while others did not mention a single location throughout the article. In such cases, I used the geographical location of the author, for ex. PhD. John Brown University of California or Mexico – this will be coded under the Americas. In the cases of sub categories like security under management; I generally looked for a concept: which I limited to the minimum of two phrases or a paragraph or topic or an entire chapter. So if an article had a minimum of two phrases discussing security issues, that article is coded under security or gets an X under security in the concept matrix. To summarize, the total number of selected articles used in this literature review was 43. The amount of articles that was coded under Europe were 15 of 43 and instead of me doing it that way, I felt that it will look better in percentage. The formula that I used was “percentage = Amount ÷ base”, Percentage = 15 × 100 ÷ 43 and the answer is 34.883. I rounded it up to a 1 decimal place giving me 34.9%. 15 of 43 is 34.9% of 43.

definitely have different needs but by better understanding a major stakeholder group ex. Citizens and going in-depth, the government will ensure and improve the level of participation while providing better services. The government is the major stakeholder with the amount of 65.1%, which is logical since they provide the majority of these services if not all. Others like NGOs, etc. are the lowest with 11.6%.

**Table 7 Stakeholders**

Stakeholders				
	Citizens	Business	Government	Others
Percentage	62.8%	37.2%	65.1%	11.6%

Most of the government focus seems to be external, directed to citizens and business. The majority of the government organizations were providing information to areas outside their organization. External had the highest with an amount of 72.1% while relational seemed to be the lowest with 11.6%.

**Table 8 Transformation Area**

Transformation Area			
	Internal	External	Relational
Percentage	60.5%	72.1%	11.6%

Every government organization had a reason for using social media or Web 2.0 making the drivers to be the highest with a percentage of 95.3% and technology being the lowest with 25.6%. One of the reasons why technology seemed to be the lowest is that, most government organizations are using the social media platforms as they are, without modifications. And due to this, there is little or no need to integrate or do any coding/programming. By better understanding the demand-pull, government organizations will be in the position to make the right choices, beginning with understanding why and how they should get into and/or maintain Web 2.0.

**Table 9 Demand-pull**

Demand-pull				
	Drivers	Application	Principles	Technology
Percentage	95.3%	90.7%	93.0%	25.6%

Web 2.0 or social media is co-production, participative, type of platform so it makes sense that Authoring had the highest percentage with the amount of 79.1% followed by links with 60.5% and extension being the lowest with 9.3%. By understanding the operations, government organizations will be in the position to know what features of Web 2.0 they are interested in, which can also be a means, use to select the right application for the job.

**Table 10 Operations**

Operations							
	Search	Links	Authoring	Tags	Extension	Signals	Ratings
Percentage	53.5%	60.5%	79.1%	51.2%	9.3%	41.9%	37.2%

Management is a very important aspect, because there are many different kinds of potential treats; the use of profanity, information overload, privacy, security awareness, espionage, etc. all of which has to be managed and/or monitored. The most occurring management factor is participation with 72.1% followed by risks with 46.5%. The lowest is accessibility having a percentage of 7.0%, which could also be due to the fact that most cases or articles are based

on locations that do not have internet accessibility problems. This could be based on the lack of prior research on Web 2.0 in developing countries.

**Table 11 Management**

Management												
	Risks	Education	Social	Services	Security	Awareness	Strategy	Accessibility	Participation	Knowledge Management	Transparency	Trust
%	46.5%	25.6%	32.6%	39.5%	41.9%	18.6%	25.6%	7.0%	72.1%	20.9%	23.3%	37.2%

The major categories identified and is focused on throughout the literature review are; Stakeholders, Transformation area, Demand-pull, Operations and Management. They are all interrelated one way or another and each and every one of them supports at least one of the other categories. Web 2.0 in the government raises a lot of questions and uncertainty and they definitely should not be taken lightly. Even though Web 2.0 has a lot of different benefits G. J. Baxter et al. (2011) suggested that It could also be important to assign a product champion, someone who will promote the cause of the Web 2.0 tools and encourage the use of them. However Singh et al. (2010) stated that the implementation of Web 2.0 technologies in organizations was easy, it was getting the people on board that was the difficult issue. This means proper planning, and in such cases it is essential to review the organization’s culture and find out whether the Web 2.0 technology can accommodate it (G. J. Baxter et al., 2011).

**2.3 A proposed framework**

This thesis seeks to investigate how government organizations can use Web 2.0 or social media, however after going through the prior research, I was able to identify or place several results from the literature review into the main or sub categories. The three main categories that were focused on from the summary of the literature review are: Demand-pull, Operations and Management as well as the sub chapters of stakeholders and transformation area.

The framework below illustrated in figure 5, shows the three main categories that were identified from the literature review, which are: Demand-pull, Operations and Management. Basing on the first category, government organizations should be able to figure out the reasons for using web 2.0, types of applications, etc. while the category operations will enable them to understand what can be done on the various social media platforms. The final category management will enable them to maintain and manage the service or information that they provide. The key in understand how government organizations can use Web 2.0 depends on the government organization in question, which can also be better understood by its stakeholders and the transformation which also determines and supports the three main categories.

The framework below is based on the literature review alone and in order for me to cover most aspect; another version will be discussed after going through the results in chapter 4 as well as the connections between the categories. To briefly explain; the triangle in the middle represents key mechanisms, elements or factors that influences the three main categories. For example stakeholders need to manage or do the managing, they will be performing operations

like commenting or authoring and as for the demand-pull they will either be the ones supplying or demanding these services.

The proposed framework should assist in answering my research question: How can government organization use Web 2.0? I listed few questions based on the framework that will be further discussed in the discussion chapter.

1. The Demand-pull
  - a. The demand-pull should help government organizations understand why they need to be a part of Web 2.0 – the drivers
  - b. Which applications will best suit their needs?
  - c. Principles: how are they going to use Web 2.0 – collaboration, participation, etc.?
  - d. If the needs arises, what type of underlying technology will they need for integration, to further develop required services or combine services
2. Operations
  - a. What can be done on these social media channels, ex. Search, comment, ratings, etc.?
  - b. How can it be done?
3. Management
  - a. What is to be managed?
  - b. Who should do the managing?
  - c. When? How often?
  - d. How is it to be managed?

### DOM Framework for a Web 2.0 Government

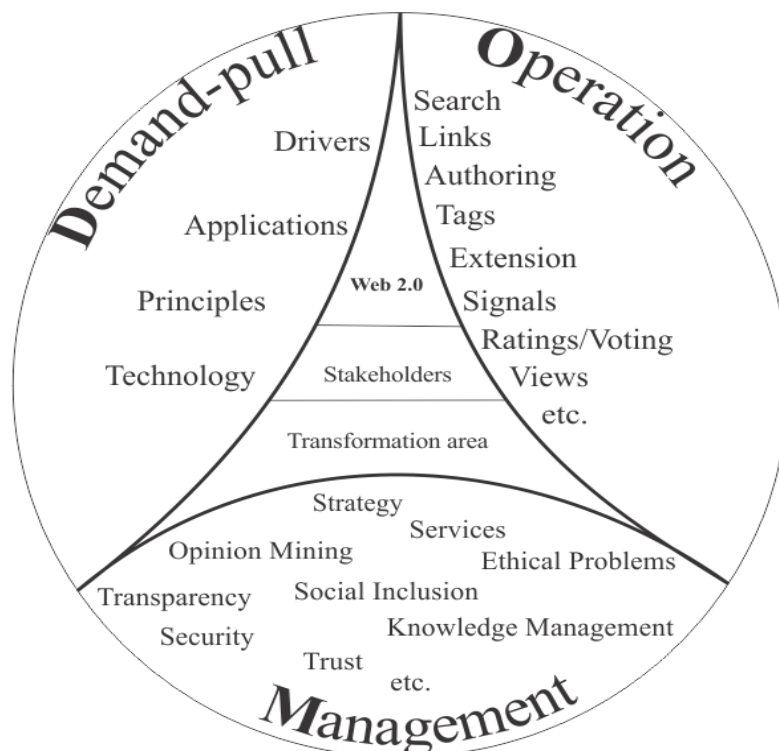


Figure 4 A DOM Framework for Web 2.0 Government

### **3. Research Approach**

This chapter describes the research approach, research strategies, analysis, etc. that this study is based on and the purpose for this is to give an insight on how I carried out my research. Even though the prior research investigated and discussed a bit about the complexities of Web 2.0, to further address this research question, a qualitative research was conducted.

#### **3.1 Research Method**

Golafshani (2003) defines Qualitative research as a naturalistic approach one uses in seeking to understand phenomenon in context-specific setting. This type of research is usually carried out in the real world meaning that participants are closely involved and their points of view helps to resolve or better understand the phenomena. Qualitative research is best suited for answering research questions that begins with how or why because this type of research is not completely influenced by the researcher and data is collected up close, giving me the opportunity to observe and see nature takes its course in real time.

There were several interesting participants who were directly involved in this research, this insinuates that there will be different points of views, suggestions and so on. A qualitative research method enabled me to draw a better context from the collected data and theories associated with this topic.

It doesn't really matter whether one is undertaking a quantitative or qualitative study; a philosophical assumption becomes a necessity to define the premises of a valid research and/or which of the methods is appropriate. Myers (1997) went on stating that there are three main or mostly used underlying epistemology/philosophical assumptions: Positivist, Interpretive and Critical.

Amongst the previously mentioned assumptions, I believe an interpretive philosophical assumption was the right assumption to use because it aimed at producing an understanding of the context and the processes that influence or/and is influence by the context (Myers, 1997). Myers (1997) went on saying that interpretive researchers start out with the assumption that access to reality (given or socially constructed) is only through social constructions such as language, consciousness and shared meanings. Understanding how social media can be used by government organizations couldn't get a better fit, in my opinion. The participant base (government organizations) is really large; a well-constructed interpretive qualitative research facilitated me in covering most aspects of the entire research.

#### **3.2 Research strategy**

The strategy that was used in conducting this research was a Case Study of multiple government organizations. According to J.W. Creswell, Hanson, Plano, and Morales (2007) a case study focuses on an issue with the selected case whether it is an individual case, multiple cases, programs or activities, and that it provides insight on the issue with the individual case. A single case study is analogous to a single experiment and many of the same conditions that justify a single experiment also justify a single case study (Yin, 2008) (p.47). This research is focused on a single case study which is on the use of Web 2.0 by Government organizations. I might compare and contrast in some areas but the main goal is not to understand the differences between government organizations but to understand the use of Web 2.0 by all government organizations as a whole. And due to this I decided to use a single case study

since it is a single experiment; however the case design may seem as a multiple case design, it is still a single case study.

The use of Web 2.0 in government organizations can better be described in details with the help of a case study while the research question can be investigated in-depth within its real-life context. In order to provide better results or solutions to my research question, multiple government organizations were investigated, all of which had some similarities as well as many differences. This enabled me to gather different types of information and perspectives, when it comes to the use of social media by government organization. The case study focused on the usefulness of Web 2.0 to facilitate and get a better understanding on how government organizations can benefit and encourage the use of Web 2.0 channels. How can the use of this channels be encourage, the level of control, benefits, etc. are few questions that were further investigated.

To sum up, I first began with the Theoretical data; by conducting a literature review which lead to the framework. The literature review helped me to better understand the existing research and set the basis for the Empirical data. The empirical data is based on 10 interviews that were conducted in 5 government organizations. The two should be enough to set a very strong foundation for the discussion and the answering of the research question.

### **3.3 Technique for data collection**

P. Baxter and Jack (2008) Patton 1990 and Yin 2003 recommended the use of multiple data sources as a strategy which also enhances data credibility. The collection of empirical materials was well strategized as it seems to be one of the most important phases. There are two types of empirical materials: primary sources which entails data collected by the researcher directly and unpublished data (Myers, 1997) while secondary sources are data that have been previously published. The secondary sources in this research includes the revision of Facebook pages, Twitter accounts, YouTube accounts, magazines from various organizations as well as the state (national) etc. which help me to better understand the phenomenon and the practices of the various organizations.

Collecting data for this research entailed a lot of planning, preparation and scheduling since empirical material collection was time consuming. It was important to plan for interviews, for example, the selection of participants – who, where, the duration of the interviews and so on. In this case, it was the people with key roles relating to social media in the government organizations or at least those that ran operations that are significant for the utilization of Web 2.0. In order to select the various participants, a letter was sent out to the various government organizations explaining the goals and reason for my project, they chose the relevant participants. Most of the response I got back was very positive but unfortunately, few others couldn't make it. One always has to take certain precautions when it comes to dealing with people, which is very simple, you have your plans and they have theirs, due to this I was able to adapt. However, my intention was to investigate both government organizations using web 2.0 and those who hadn't begun yet as well as all those in between and because of this, few of the difficulties I faced was to identify their various operations, their collaboration and communication patterns, and their participants – whether internal, external or relational.

### **3.3.1 Interview guide**

My interview guide was based on the DOM Framework presented in chapter 2.3, and the interview guide can also be found in the appendixes. To prepare for the interviews and ask relevant questions, my interview guide was semi-structured and most of the questions were prepared beforehand even though I had to leave a lot of room for improvisation (Myers & Newman, 2007). Even though my interview guide may look like it was a structured interview, it is semi-structured. I had to gather a lot of information from different organizations that were at different phases or levels on the use of social media in their respective organizations and because of this there was a good amount of improvisation as well as preparation. The majority of the questions that was use in the various interviews were based on the results from the prior research or the literature review presented a bit earlier in this paper. Well during the interviews I had the interview guide right in front of me so that I would be in the position to go through and not leave out relevant inquiries but I was also alert to listen to the information being received and to ask the participant to elaborate a bit more if necessary.

Myers and Newman (2007) suggested that the minimum preparation that a script/interview guide should consist of includes: the opening, introduction, key question, and the closing. My interview guide was based on a similar structure; starting with an introduction where I presented myself and give a little bit of information about my project. Next, I gave an opening statement that focused on ethical issues, confidentiality, the rights of the participant, asking permission: ex. audio recording, etc. followed by factual information, key question or main section and finally the closing. I used a single interview guide but written in both English and Norwegian, since I conducted several interviews in both languages.

### **3.3.2 Interviews**

The primary method or technique used was face-to-face interviews, during which I visited the majority of the organizations to conduct, except one participant who visited me at my University for the interview. However, qualitative interview is an excellent means of gathering data but it is filled with difficulties (Myers & Newman, 2007). Myers and Newman (2007) discussed that some of these difficulties are connected to the fact that the researcher is talking to a complete stranger, asking the interviewee to answer or create an answer often under time pressure, etc. and in order for a face-to-face interview to reduce all or most of these risk, certain measures need to be taken by the interviewer/researcher. Few of these measures are further discussed in the sub chapters below but I also use the e-mail that I send out to potential participants as a means to inform them in advance.

As you will see in table 14 shown below, a total of 10 interviews were conducted in 5 Norwegian government organizations with the primary goal of better understanding how these organizations are using Web 2.0 or social media in their respective organizations. As I stated earlier, all interviews were based on a single interview guide that was conduct in both English and Norwegian depending on the participant. Every organization was using social media differently so the questions that were asked depended upon several factors: ex. How the organization was using social media, the response from the participants, and so on.

**Table 12 Overview of Interviews conducted**

	<b>Date conducted</b>	<b>Duration</b>	<b>Language</b>
Organization A (1)	06.03.2013	00:58:15	English
Organization A (2)	15.03.2013	01:04:02	English
Organization A (3)	15.03.2013	00:51:32	English
Organization A (4)	18.03.2013	00:54:03	Norwegian
Organization B (5)	11.03.2013	01:05:16	English
Organization B (6)	11.03.2013	00:43:20	Norwegian
Organization C (7)	13.03.2013	00:48:02	Norwegian
Organization D (8)	20.03.2013	01:06:15	Norwegian
Organization E (9)	20.03.2013	01:24:10	English
Organization E (10)	09.04.2013	00:47:42	Norwegian

It was also necessary to ensure that these interviews were recorded and that notes were also taken for future references. Other methods for collecting data included the revision of secondary sources, ex. Facebook pages, Twitter accounts, organization's website, etc. but first and foremost the primary sources were prioritized.

### **3.3.3 The role of the interviewer**

There are several things that can go wrong during an interview, Myers and Newman (2007) suggested guidelines for interviewers most of which I followed. One example is minimizing social dissonance: minimizing anything that may lead to the interviewee to feel uncomfortable. The reason for this is that those that I was interviewing were complete strangers, meaning that there could be lack of trust, etc. I had to show respect to them and their job, be patient, dress appropriately, etc. to increase the level of disclosure. Another factor that could have played a major role here is that before the interviews started, I give a brief description of my project as well as discussed confidentially issues, anonymity, etc. This might have increased the trust between us, knowing that no personal information about them will be access by others or used in the report without being agreed upon. Mirroring, which is taking the words and phrases the informant used and construct a subsequent question or comment (Myers & Newman, 2007). I had to listen very attentively to be able to achieve this, which was very important due to the fact that most government organizations use Web 2.0 differently. A case study investigator should be able to ask good questions and interpret the answer, be a good listener, be adaptive and flexible, have a firm grasp on the issue being studied and finally be unbiased by preconceived notion (Yin, 2008) (p.69).

As an interviewer I had to show a lot of interest in what we were discussing, be understanding, etc. however I used a digital recorder from Olympus called "digital voice recorder ws-812". I bought it with a rechargeable battery, which I charged every night before each interview section as well as took along spare batteries to ensure that nothing went wrong. I also had three other digital recording apps on my iPad as backup, in case the Olympus recorder failed. The reason for recording was to transcribe at a later date without missing out on what was said or discussed.

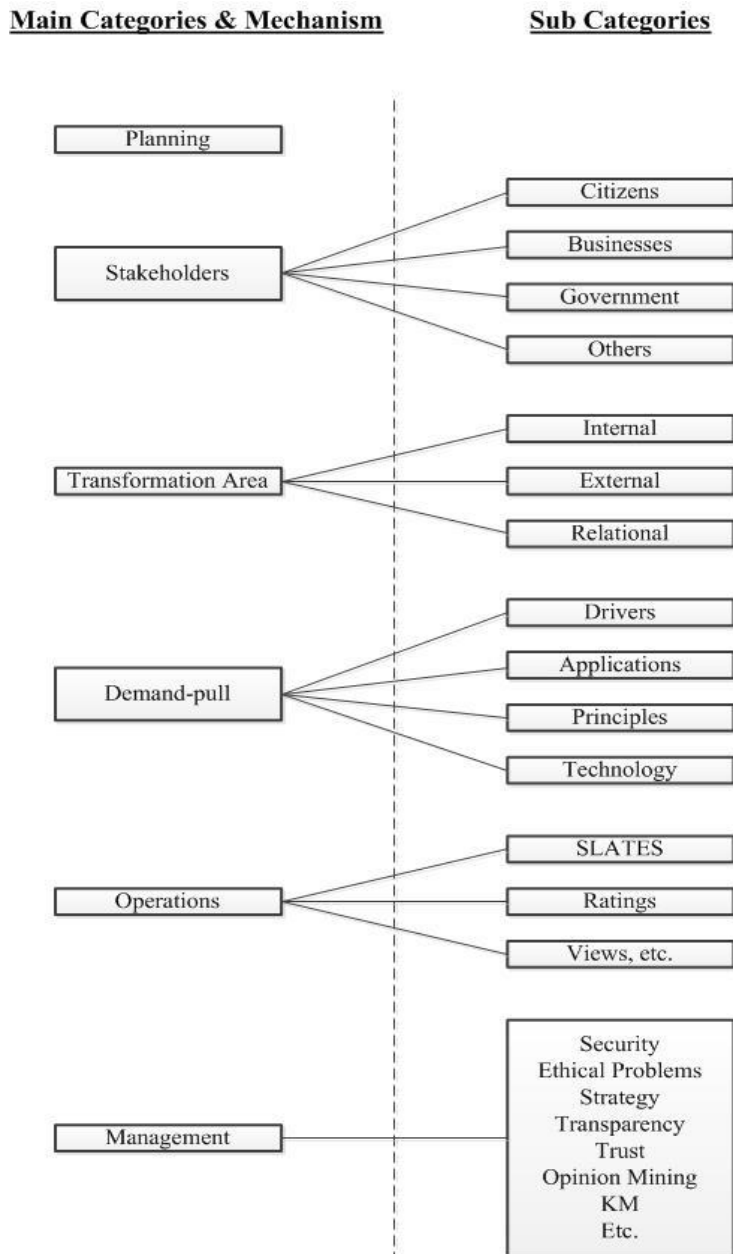


### 3.4 Analysis

Narrative data can be produced from many sources such as: open-ended questions, individual or focus group interviews, observations, reports, etc., (Taylor-Powell & Renner, 2003) in this case semi-structured or open-ended question were used. Taylor-Powell and Renner (2003) also discussed that narrative data can be analyzed in five steps, a concept that I used in conducting my analysis. The five steps included:

1. Get to know my data: a step which basically included a lot of listening to recordings, transcribing, reading, re-reading and so on; this process was mainly to help me better understand and know exactly what kind of empirical data I had and how it fitted in with the Norwegian government organizations use of Web 2.0.
2. Focus the analysis: I began by asking myself questions like what is the purpose of this analysis, what do I intend to evaluate or find out. I set the focus by questions or topics, time periods or events, etc. and the purpose of this step was to help me decide on how to get started while taking a closer look at the participating organizations of this research and their responses.
3. Categorize information: in order for me to categorize the information, I started by identifying the different types of themes or patterns and organize them into categories.
4. The next step was to identify the various patterns and their connections within and between categories. For example: How important is a specific category and how does it relate to or affect the next. One of the five analytic techniques mentioned by Yin (2008) (p.136) is pattern matching which compares the empirically based pattern with predicted ones or prior research. A similar technique I used with steps four and five.
5. Interpretation – bringing it all together. The final step was where I compare and contrast, interpreted the data and drew a context.

In conjunction with the analytical strategies above, Yin (2008) (p.130) discussed four general strategies from which I chose a strategy called relying on theoretical propositions. It is a strategy that allows one to follow the theoretical propositions that led to the case study. In other words, my case is strongly based on the literature review or prior research. Naturally, the categories used in this study emerged from the topics discussed in the prior research chapter. The various topics are summarized into major, key mechanisms and sub categories below in figure 5.



**Figure 5 Categories of the research**

After going through a lot of the empirical data, I noticed that planning seemed to play a very important role, a role that I did not notice during the literature review. The categories of the research are based on the DOM framework as well: Planning, Stakeholders and Transformation area are part of the Key Mechanisms and Demand-pull, Operations and Management are part of the main categories – D.O.M. in the DOM framework.

The sub categories of operations and management can be very large depending on the organization's choice of web 2.0 applications and principle of collaboration. For example: Facebook may have more operations and management needs than YouTube. The elements shown under the sub categories of operations and management are just few examples.

### 3.5 Validation and Reliability

Yin (2008)(p.40) discussed that because a research design is supposed to represent a logical set of statements, one can also judge the quality of any given design according to certain logical test which includes: trustworthiness, credibility, conformability and data dependability. He proposed a case study tactics for four design tests even though the four tests can be used with all common social science methods.

The four design tests are:

- Construct validity: is to identify the correct operational measure for the concepts being studied.
- Internal validity: is seeking to establish a causal relationship, where certain conditions are believed to lead to other conditions.
- External validity: defining the domain to which the study's findings can be generalized.
- Reliability: demonstrating that the operations of a study, such as the data collection procedures, can be repeated, with the same results.

The figure below illustrates the tactics for the four design tests.

TESTS	Case Study Tactic	Phase of research in which tactic occurs
Construct validity	<ul style="list-style-type: none"> <li>◆ use multiple sources of evidence</li> <li>◆ establish chain of evidence</li> <li>◆ have key informants review draft case study report</li> </ul>	data collection data collection composition
Internal validity	<ul style="list-style-type: none"> <li>◆ do pattern matching</li> <li>◆ do explanation building</li> <li>◆ address rival explanations</li> <li>◆ use logic models</li> </ul>	data analysis data analysis data analysis data analysis
External validity	<ul style="list-style-type: none"> <li>◆ use theory in single-case studies</li> <li>◆ use replication logic in multiple-case studies</li> </ul>	research design research design
Reliability	<ul style="list-style-type: none"> <li>◆ use case study protocol</li> <li>◆ develop case study database</li> </ul>	data collection data collection

**Figure 2.3** Case Study Tactics for Four Design Tests

Figure 6 Case Study Tactics from Yin (2008)

McKinnon (1988) defines validity as a concern to the question whether the researcher is studying the phenomenon he/she is to be studying; and reliability as a concern to the question of whether the researcher is obtaining data on which he/she can rely on.

The validity and reliability strategies are summarized below in table 13:

Table 13 Validity and Reliability Strategies

<b>Validity Strategy</b>	<b>Strategies description</b>
<b>Peer debriefing</b>	Peer debriefing is the review of the data and research process by someone who is familiar with the research or the phenomenon being explored (John W Creswell & Miller, 2000). I was able to get academic supervision from a professor at the university throughout my entire research. He is well experience on the subject matter, have written a lot of conference proceedings, etc.
<b>Literature Review</b>	The literature review was carried out in advance to ensure a stronger foundation for the empirical data collection and set the basis for the research. All prior research is referenced, where they were taken from is discussed, etc.
<b>Pilot interviewing and projects</b>	Throughout the entire master program, I conduct a lot of different small projects and interviews for several term papers in different courses ex. IS-404, IS-417, etc. so I had a lot of training and great feedback to prepare me for my thesis.
<b>Interview Guide</b>	A well-researched interview guide was created to keep me on track and ensure that I asked the similar questions in all organization with the goals and key areas to research in mind.
<b>Clarification of biases</b>	(Yin, 2008) (p. 72) discussed that because investigators have to understand the subject matter before hand, they only seek to substantiate a preconceived position. I try my very best to keep an open mind while being acceptable to contradicting facts. The concept matrix was also used to reduce biasness.
<b>Member Checking</b>	Member checking can be described as the most crucial technique for establishing credibility (John W Creswell & Miller, 2000). Each transcript was send back to the participant the information was collected from to check for misunderstandings, misinterpretations, further comments, etc.
<b>Thick, rich description</b>	Is another procedure for establishing credibility in a study, by describing the setting, the participants and the themes of the qualitative study in rich details (John W Creswell & Miller, 2000).
<b>Construct validity:</b>	
<b>Multiple source of evidence:</b> <ul style="list-style-type: none"> <li>• <i>Documentation</i></li> </ul>	Multiple source of evidence: Triangulation is a rationale for using multiple source of evidence (Yin, 2008) ( p.114).  printed magazines, organization brochure, student handbook, annual report and statics in about the organization in the form of magazine, governmental social media guidelines

<ul style="list-style-type: none"> <li>• <i>Interviews</i></li> <li>• <i>Direct Observation</i></li> </ul>	<p>multiple face-to-face interviews in different organizations and multiple individuals within some of the same organization</p> <p>I visited multiple social media platforms to see how it is being used. During few of the interviews I was also shown part of what they do, for example: see their statistics, views etc.</p>
<b>Internal validity</b>	I was able to do pattern matching by placing similar findings under specific categories, set up rival explanations for further discussions, in the discussion section, etc.
<b>External validity</b>	I was able to identify and draw general conclusions basing on the multiple organizations that were investigated and I can honestly say that these findings are generalizable and beyond the scope of an individual or single organization. The goal was to better understand how government organizations can use Web 2.0, so the findings were always meant to be and are generalizable.
<b>Reliability Strategy</b>	<b>Strategies descriptions</b>
<b>Transcripts check</b>	I did a member checking to ensure that I did not make a mistake while transcribing and I also double checked for common mistakes, etc.
<b>Maintaining a chain of evidence</b>	(Yin, 2008) (p.122) suggested that it a similar principle based on the notion used by forensic investigators. By starting from my research question and going through the literature review, one will understand why I focused the research on the categories that I chose to investigate as well as the investigations carried out in the various government organizations. One will also be able to see how I arrived at the results that I did arrive at and the conclusion that was drawn. It will also be possible to work ones way back from bottom to top or middle to the sides. In others words I was able to maintain a chain of evidence.

### 3.6 Role of the researcher

There are a lot of ethical problems surrounding every research study but the most important are always those of the participants. The participants are those directly involved in the research (Oates, 2005), in other words the primary sources of an empirical material. For example: the people I interviewed/observed, etc. I had to gain the participants consent, protect them from any harm including avoiding the use of any deception in my study, protect their privacy and confidentiality, (Yin, 2008) (p.73).

Sensitive data or not, I have an obligation to my participants, people or government organizations and some of these obligations include: who has access to the collected data, data protection, what kind of technologies can be used during the research, etc. An example could be the denial to do a video recording and this requirement should be met by me. And finally I should reevaluate myself, my work ethics as I strive to present my work as mine and that of others should be referenced.

### **3.7 Limitations**

Every research study has its limitations which could be caused by the choice of the research method, the philosophical assumption, the research design/strategy, data collections methods, analysis, theories and context formulations etc. Each has its strengths and weaknesses/limitations. The interviews were the primary source of information and played a major role in the answering of the research question. A detailed and well defined and categorized interview guide could drastically decrease the limitations and direction of the entire research. For example: the thumb rule of garbage in garbage out could be applied to the interview guide. The interviews and interview guide could increase or decrease the scope of the research.

Other limitations included finding the right or willing participants, political or legal issues that determines what information I am allowed to get access to, etc. and a few unforeseen difficulties that could limit this research. I was unable to get access to one of the intended government organizations I had in mind, due to the organizations lack of potential participants since other participants were already taken by students from my university. Every organization that I collected data from had something new to offer, missing out on one could be seen as a disadvantage/limitation.

However, it did not seemed like I was being denied access to information but few of the organizations do have their headquarters in the capital where their Web 2.0 services/platforms are being managed. I was able to get access to individuals that were chosen for me or those that are responsible for the social media in few of the sub branches and this could be seen as a limitation due to the fact that I might have miss out on relevant participants. One of the preferable steps I toke was to identify the main potential limitations and find a better strategy to solve or minimize these limitations. For example: one of the organizations that I was unable to get a participant from the head office, I received a magazine, more like a guideline on how the organization is to use social media. Due to the fact that I collected information from multiple organizations, it was a bit hard for me to go in-depth and this could be seen as a limitation.

## 4. Case Analysis

The analysis of the empirical data collected is discussed in this chapter as followed:  
I first started by giving a brief description of the organization investigated and summarized all related findings for all organizations.

### 4.1 Case Descriptions

In this sub chapter all of the investigated organizations are briefly described and the reason for this is that the organizations are not the key focus; instead it was their use of social media and in order for me to establish a setting, the various organizations are presented.

#### 4.1.1 Organization A - University

Organization A is one of eight universities located in Norway, it was previously a university college and got the status of a University few years ago. It is a modern institution for higher learning and research; it has close ties to the regional businesses and the public sector as well as several international connections that enable academic exchange of students and staff with partner institution around the world. Organization A has about 1000 employees located on two campuses with about 700 located at location 1 and 300 at location 2. Most of them are academic employees; they teach or research and then few others are more administrative and support the academics. There are a total of about 10000 students, 7000 located in location 1 and 3000 in location 2.

Few of the departments at the university include; communication department – they are responsible for the logo material, profile, contact with the press, mediation of research, etc. The department for student recruitment is responsible for opening day on campus, they make the student catalogues, web catalogues, the web pages that focus on the course that the university has to offer, they collaborate with the various faculties, they help with facilitating activities, announcements, and so on. The university has five Faculties: the faculty of Health and Sport Sciences, faculty of Humanities and Education, faculty of Fine Arts, faculty of Engineering and Science and Faculty of Economics and Social Sciences.

#### *Participant # 1*

Participant #1 is half Norwegian and German and got his Master's degree from England in e-Commerce. According to him, his Master degree was mostly technical ex.; Web development and little bit of business patterning to usability, organization aspects and so on. He also got his Bachelor's degree in IT engineering. After he was done with his studies, he did few smaller jobs and then joined organization A where he has been working for the past six and a half years. His job description at organization A is to manage the Content Management System but he actually works with everything from the technical to content design, training, social media, almost every aspect. Even though there are other people in each department on both campuses that administrates the systems, he is at the central administration for web.

#### *Participant #2*

Participant #2 is a Norwegian and got her bachelor's degree in Public health. Before starting her Bachelor's degree, she work for ten years in a kindergarten, after which she worked two years at the Regional council conducting surveys regarding the challenges senior high (Upper secondary) schools have with regards to physical activities, nutrition, smoking and on an

equality project. She started working at organization A about a year ago and her job description is that she works as an Executive Officer.

She and her co-workers usually rotate at the service desk where they have students coming in and asking questions about everything. They try to help and direct them to who they can talk to. They are also responsible for managing the switch board at organization A; ex. They answer calls, connect callers to the right people or faculties they want to talk to, answer e-mails from students as well as office related matters; guide students regarding studies, the educational student loan fund, semester registration, and so on. She has also made a few calls to the student loan fund organization but her main job description is to gather and share information.

### *Participant #3*

Participant #3 is a Norwegian and she is the Assistant Director responsible for managing the service desk which includes the archives, post distributions, the telephone systems and the first line of contact with the students and others: ex. Visitors. She has been working at Organization A since autumn 2007 and she is still working on completing her Bachelor degree in communication within three courses. She has been working from the age of 19 with different information related topics, for example: she worked with journalism for 5 years, as an archive manager in a couple of years and before she started working for organization A, she worked as the head of cultural information in a neighboring municipality. They are about 23 employees working in the department including 4 apprentices.

### *Participant #4*

Participant #4 is a Norwegian and has a Bachelor degree in Marketing Communication for BI (Norwegian Business School) in Bergen. He also took one course in Political Science at the University of Agder, at the time it was still a university college. And he also study sport journalism at the Norwegian Folk High School before starting his studies at the university. He has been working at organization A since October 2008, so for about 4 and a half years.

He works in the department for student recruitment mainly with text in relation to the web and various activities targeting potential students (High School students). Few examples includes; educational affairs and school visits where they interview students at organization A and engage them to be ambassadors for the university, so that they (the ambassadors) can travel throughout the country and talk about the university. He is responsible for coordinating the training of students representing the various faculties at the universities. Their department has about 7 employees.

## **4.1.2 Organization B – Road Administration**

Organization B is a national organization divided into five regions; region south, region west, region east, central region and region north. The organization is responsible for the planning, construction and operation of the national and county road networks, vehicle inspection and requirements, driver training and licensing. The region that the both participants are working from has about 1000 employees but the entire organization has about 6000 employees throughout the country.

Departments within the organization includes; roads and transport, road users and vehicles, traffic safety – environment and technology, strategy and economy, HR and administration, ICT, communication Staff, and international staff.



Participant #5 is a Norwegian and Works as a Communication Advisor for Organization B. He studied Political and Media Science and has the old bachelor degree called Cand. Mag. and it took four years to complete. He also one Pedagogical studies and is presently done with ¾ of his Master's degree in Political Science, which will probably be completed this fall.

He has been working with Organization B for about 2 years and before that he work with one of the local municipalities for 13 years, doing something similar. He is one of 9 working with communication in his region which consists of five counties. He uses part of his time on video filming and editing and when he is needed, he also provides similar services for other counties as well. His main job description is that he works with communication in the sense of media handling; providing journalists with information from organization B, internal communication – internal web pages, provides information about a project to the media and public when a new road is being build. He also works with other internal and external units for example the human resources department where they presented the organization to students, potential workers and recruited people from universities.

Participant #6 is a Norwegian and has a Master degree from BI (Norwegian Business School) in Leadership with a major in Communication. She has been working with communication in organization B since 2003 but early this year she was moved to another department. She is now working 50% with management and the strategic staff and the other 50% is with the organizations main office, nationally, to develop new national traffic campaigns. She is currently working on a strategic master plan for their region which focuses on reexamining the organization for the future and is developing a new campaign to improve the interaction between the cyclist and drivers in the traffic. She started working with organization B in 1996.

#### **4.1.3 Organization C – Labor and Welfare Administration**

Organization C is a very big government organization partially own by the local municipalities that it is located in and the state. It was founded due to the merger of the social welfare and labor administration to become part of the local municipality. The organization closely collaborates with the various municipalities that they are located in. There is one office located in every municipality throughout the entire country and the region that I investigated has about 15 municipalities meaning 15 offices distributed throughout the region.

Due to the merger there are employees that have been hired by the state and employees hired by the local municipalities, even though they all work for the same organization. There are about 400 employees working for the 15 offices in the region with about 130 employees located at the head office of the region. The total number of employees throughout the entire country is about 14000 with about 457 offices.

The organization has several departments; for example the management department that works with the management of support cases of all possible arrangement ex. Social benefits, etc. There is an aid center; a department that helps disabled people with their needs ex. Wheel chair, translators for deaf people, etc. Few of the many services that they provide includes; pension, family services – child birth, adoption, single parent support, etc. social services, health and sick leave, unemployment, etc. The organization come in contact with about 2.8 million people every year on average and each encounter is about four inquires.

Participant # 7 is a Norwegian, lived many years in Oslo but is originally from the south. He studied Political Science at the University of Oslo and worked a lot with politics during his stay in Oslo including the Norwegian Parliament. He has been working with Organization C for about 6 months as a communication consultant, with both internal communication within the organization and external communication with the 15 other offices located in the region. He works a lot as an employee of the state (the national government) but also helps the local offices with their communication needs; for example: managing media inquiries and things that they intend to publish, various cases that interest the public sector, etc. He gets the intended information out while promoting a better angle of what they do, assist journalist with information on cases they are working on, he is also responsible for putting things on their web pages and intranet, has a close contact with the department in Oslo, etc.

#### **4.1.4 Organization D - County Governor**

Organization D is one of the 18 different county governor's offices located throughout the country. Organization D is located at one of these 18 different locations and caters to the people and society, kindergartens and education (from primary to upper secondary schools), children and parents (child protection, etc.), health and care services (public health, etc.), climate and environment, agriculture and food, municipal administration, planning and building and civil protection. The main goal of the organization is to serve as a government representative in the county while working to ensure that the parliament and government's decisions, goals and policies are carryout accordingly.

There is one governor in each county, there are 19 counties but Oslo and Akershus have one governor, so there are 18 different County Governors. All of the governors' offices have a common web portal because they have some things in common. However the common web portal is being run by Søgne og Fjordane, one of the counties in the western part of Norway. All of the counties have their own webpage.

There are five different departments: education, healthcare, agriculture and a department called community department which has a complex structure. The community department has lawyers that work with on plans in accordance with the buildings code, child welfare, the municipality's economy, emergencies and a task called guardianship.

Participant #8 is a communication consultant at organization D. Her nationality is Norwegian and she has an educational background in public Administration from the University of Agder. She also study communication, she is also an advisor to the administrative department where the service desk, ICTs, an accountant and an archive is located.

#### **4.1.5 Organization E – Regional Council**

The Norwegian public sector has three levels: the national government, the municipalities and between them, is organization E. Organization E is a political organization with its own politicians who are democratically elected every four years, and has the responsibilities for public welfare in the county. Few of the services that the organization provides, include: managing the county's upper secondary schools, over 2000 km. of county roads, the county's dental clinics, public transportation in the county, public health, archeology and preservation, art programs and festivals, nature and wildlife management, participation in international networks and organization, and so on. The organization has about 1600 employees. The organization's key units includes: regional services – plan and environment – nutrition and

energy, education -- adult learning, the district administrators staff – IT – information and services, and so on.

Participant #9 is a Norwegian and she received her BA from the University of Stirling in Scotland, in film and media studies 1993. She also did her Masters in Media management at the same university 2010. According to her, when she completed her bachelor degree the internet phenomenon was just beginning and after 15 years of working on the web, she thought it wise to do some more studying. She worked 10 years at a local Television, 4 years at the Norwegian Parliament and before all of this she freelance with newspapers and she has been working with organization E a little over 5 years now. She is a Communication Officer and is mainly responsible for: social media and intranet -- the internal communication channel, and all sorts of advisory roles for anybody working at the organization -- from the chairman, top leaders or ordinary employees. She also does media training; make guidelines and recommendations for all sorts of aspects with in the media, whether it is traditional media, social media or internal communication.

Participant #10 is a Norwegian and works at organization E as a Communication Advisor and a web editor. He has a university degree in language, law, a teacher's degree and a background in marketing. He has work for about 30 years with the public sector in the municipality and organization E. Participant #10 is responsible for communicating with the organization's targeted group and the public: about their political activities, the different cases they are handling, the decisions that have been made, etc. and in addition, he publishes it to their website or social media platforms. He also ensures that the media (press) is aware of all of this through press messages and direct contact with journalist and editors.

## 4.2 Case Analysis

In the analysis, chapter 3.4 discussed the coding process based on the DOM framework which enabled me to identify three key mechanisms that supports the use of social media by government organization as well as three main categories that will enable government organizations to be more focused. The key mechanisms, main and sub categories of the DOM framework are illustrated in table 14 below.

Table 14 Key mechanisms and main categories

<b>Main Categories</b>	
<b>Demand-pull</b>	Enables the organization to establish a reason for using social media
<p><i>Sub-categories</i></p> <ul style="list-style-type: none"> <li>• Drivers</li> <li>• Applications</li> <li>• Principles</li> <li>• Technology</li> </ul>	<p>The organizations reason for using social media, getting users to come back to their social media platforms, etc.</p> <p>Different types of applications being used by the organization ex. Facebook</p> <p>Common characteristics observed from the use of social media</p> <p>The technological concept that provide structure and support</p>
<b>Operations<sup>2</sup></b>	Enables the organization to understand how to use or how social media is being used
<b>Management</b>	Enables the organization to support the use of social media
<b>Key Mechanisms</b>	<b>Brief Description</b>
	Key mechanisms are meant to positively influence and support the three main categories.
<b>Stakeholders</b>	Enables the organization to truly investigate who the targets are, what will be shared, how to engage, etc.
<b>Transformation Area</b>	Enables the organization to understand and determine stakeholders, the type of information that will be shared,
<p><i>Sub-categories</i></p> <ul style="list-style-type: none"> <li>• Internal</li> <li>• External</li> <li>• Relation</li> </ul>	<p>Use of social media within the organization</p> <p>External use of social media, outside the organization</p> <p>Cross-agency collaboration</p>
<b>Planning</b>	Enables the organization to have a strategic goal, understand the reason for implementation and explain to the rest of the organization, etc.
<b>Evaluation<sup>3</sup></b>	Enables the organization to learn from their mistakes and improve their existing strategies, routines, guideline, etc.

<sup>2</sup> Sub-categories under operations and management depend on the applications being used by the organization; ex. how it is being used, types of activities and features, etc. emerging sub categories from the findings will be discussed later.

<sup>3</sup> Evaluation was discovered while I was explaining the revised version of the DOM framework and because of this, evaluation is briefly discussed under revised framework and the conclusion.

### 4.3 Case Analysis – All Organizations

The empirical findings from all organizations are presented in this sub chapter. The reason why I merged the result is that, my research question is based on how government organizations can use Web 2.0 and the findings from this study are meant for government organizations in general. The various findings will be merged to set the basis for discussion and the DOM framework. A brief description of the key mechanisms, main categories and sub categories can be found in the sub chapter 4.2 -- case analysis or table 14.

#### 4.3.1 Key Mechanisms

The key mechanisms are based on: Planning, Stakeholders and the Transformation Area. The findings from all organizations are presented below.

##### Planning

When I asked participant #2 what were their future plans on the use of social media this was her response; *as of now everything is just done on the go, without a pre planed strategy. If we get a formal strategy in place, we can inform the university, the administration and faculties about what we have and what we are thinking about doing about the use of social media. In this way we will be able to collaborate more, the various faculties can send us links to share, etc. so it is part of my goal to have a closer contact with the various faculties (Participant #2).* While Participant #5 mentioned that (...) *they did a lot of analysis in the beginning in relation to who they were going to reach through social.*

When a new plan; routine, etc. is to be taken, the normal strategy that organization C follows usually consists of; when the implementation will take place, how, who is going to be responsible for what, etc. These are few of the questions that they had to answer during their planning. Their communication department in Oslo is constantly working on various social media strategies and offers, but informant #7 mentioned that it was important that they did not do more then what they needed to do, for example: being on a social media platform just to be there. He went on saying that it was necessary not to have too many social media accounts and that the accounts that they have, had to be unanimous enough to reach their target group. For example their region does not have its own Twitter account because the messages that they share is usually meant for everyone throughout the country.

Organization D waited a bit with their social media implementation because it is a nationwide organization and they were hoping that a common social media strategy was going to be provided but this did not happened and everyone started using it individually. However, their implementation was to take place right after Easter. Their plan is to start up with a few numbers of channels and try to run them well, instead of having many different accounts without goals and point. Participant #8 also suggested that they had to figure out what their various channels will be used for, if not they will fall into the trap of sharing the same information on all channels. She went on saying that they need to have a distinction because there could be users following them on multiple channels, which will get them pretty bored very quickly.

Participant #9 said *if there is a new social media platform, I investigate if it is something for us to use, who and when, what, how do we use it?* However, Participant #10 looked at social media from a historic perspective. He started working with public information in 1983 and at that time he said that the only tool that they had was a type writer and they wrote their press releases on paper. He went on saying that today every politician in Organization E has an Ipad

and that the organization no longer has to print out documents for meetings. *This is a revolution, the politicians have moved from paper based to digital documents and it saves us a lot of money for printing and postage fees as well as information is being delivered much faster (Participant #10).* He also talked about public information centers from the 90s where people went into these centers and got brochures that told them about various offers, how they should apply, get forms, etc. He went on saying that after most people started getting internet in their homes, the information centers started losing their purpose because everything was becoming digital.

### **Stakeholders**

Organization A's key stakeholders seems to be: students, potential students and international students. When I asked Participant #6 how they came up with their target group she said, *we created a communication plan for all of the various projects and we did it in a way that we conducted a stakeholder analysis.* In organization B, Facebook is being used for road projects, information to elderly drivers and young drivers (those practicing to get their license, those who recently got their license, etc.), those that ride their bicycles to work, etc. One of their key drivers is to get their information out about various road projects, get feedback from the people using the roads and traveling through their projects.

The key social media stakeholders of Organization C seemed to be; children and youth, parents (parental benefits), the unemployed, those seeking services from organization C in general, etc.

The stakeholders of organization D includes: individuals for example – separation and divorce people who apply to the organization, inquires relating to driver's license – health related driver's license issues, and group of stakeholders like the municipalities, other organizations that they collaborate with and the press. Other stakeholders in organization D includes: people interested in public health, fishing, education, etc. these were few of the areas that they believe people will have questions about. The stakeholders in organization E varies greatly, from politician to students, as well as several other areas of interest.

### **Transformation area**

When I asked participant #1 whether their social media channels were being used internally, this was his response, *I think the main focus is on the external use which is probably used a little bit internally as well because a lot of our so called fans on the Facebook pages are employees, so if you share stories there or sort of give information, it will also be picked up by people who are employed here.* Participant #2 said that they do have an informal user group on Facebook that is called *payday meetings.* *Each time you get your pay check; you go out with other employees and get a beer. The group name was created this way because we are not supposed to encourage people to drink. We encourage people to meet and if they want to drink, they have to decide that for themselves.*

At the county offices, social media is not being used internally in Organization C. They usually use a lot of traditional media; e-mail, intranet, etc. Employees can use the intranet to share their experiences, *for example: those that work with parental benefit have their own group where they can share the experiences that they have. In a way it is kind of a social media, they have their own space that is just for them and they can ask other branches within the organization that is working with the same issues (Participant #7).*

Participant #8 also mentioned that Yammer is being used internally by few municipalities as a micro blog but they haven't decided whether they will be using it. Organizations that are using it, for example if the service desk gets an inquiry, they post it in Yammer and within a short period they get a response from someone who knows about this, heard about it, knows who is responsible for it and so on. Another form for relational communication that they use is, there is a communication advisor in each county, so they (All communications advisors) created a Facebook group where they can ask questions, and discuss communication related topics.

Participant #9 said that their organization is using social media internally, some of their upper secondary schools classes have a Facebook group; where the teachers give students reminders about coming up tests, students could also ask and get response about something that they did not understand during class.

#### **4.3.2 Demand-pull**

The demand-pull is based on: Drivers, Principles, Applications and Technology. The findings from all organizations are presented below.

##### ***Drivers***

*With accounts like Flickr and YouTube, it is much easier to share pictures and videos that were produce here and to embed them on our web page (Participant #1). He went on saying that most of these services were setup because of the need and technique and the fact that they are cheap or free as well as a free marketing channel. For example on Facebook, potential students ask questions patterning to studies and the Facebook channel is also been used for sharing good stories from the university. I think social media can help us to have more focus, "what do you want" (Participant #3). She said that if one goes to a website, they do intend to accomplish something and not accidentally read about some small uninteresting topic. Most websites have complex structure and is hard to navigate; and maybe using social media has helped us to see that more clearly, that the users of our media want to accomplish something while visiting us. And not just to browse accidentally into university pages (Participant #3).*

Participant # 1 said that one of their driver is going to a platform where the people are but he conclude by saying that, *the people are jumping from place to place and then the organizations will have to move after them, that is part of the internet so we shouldn't be too scare going to other platforms.* Participant #2 also said that she checked the local newspapers for student related news and post them on Facebook.

One of the drivers for organization B is that social media has a wide spectrum of participants from all over, *is not just old people or young people, most people are on Facebook -- very many are not, but now there is quite a big percentage of the inhabitance (Participant #5).* And he went on saying that it will also be easier for users to access their web pages through social media platforms. The human resources department at Organization B uses Facebook and LinkedIn for recruiting people for jobs. For example, the Human resource department tries to reach a lot of people by telling them to like the organization on Facebook as well as get their friend to like them too. (...) *There is a lot of construction traffic, redirecting of traffic, etc. and they (another branch) have a Facebook page where people can go and discuss and make suggestions (Participant #6).* Participant #6 also mentioned that, it was much easier to write on Facebook then place information in newspapers and magazines and that it was easier using Facebook to capture the scope if there was a lot of resistance against

something that they were working on. It will also be easier to resolve the problem before it got out of control or had some economic consequences on the progression, she said.

They also created animation videos about their road projects before they are completed and post them on YouTube so that those living in and around the project areas will be able to see the finished product. Participant #5 went on saying that by posting these animation videos, traffic jams are usually reduced because most people know where they are going.

Participant #7 started out by say that he thinks social media is an important method of communication *because you can reach a lot of users in a very short time, often with a very little effort*. He discussed that they have to help their user to receive good services and this normally occurs through collaboration, sharing information that their users need and social media can be very important in this context. Few of Organization C reasons for using social media included: reaching many target groups, being available to the user where they are, responding quickly to users in the language they understand, spreading information effectively and reaching many, being open to user participation because they believe that user participation can make them better, etc. these were few of the reasons taken from their guide on their use of social media. He stated that one of the reasons why they use less social media was because the information that they needed to share, needs a lot of space so they use a lot of tradition web and if they needed to use social media they had to go through the Oslo office.

*The Cabinet Minister made it very clear that we have to reach out to everyone and that we have to be on the various channels that the people are using (Participant #8)*. She went on saying that the cabinet minister also made it clear that their websites is their main channel and that using other channels should not be done at the expense of their websites. One of their drivers for using Facebook is that they intend to use Facebook in a way that people will get more acquainted with them than by using their websites. For example the governor visits all leaders within the municipalities, during such occasions pictures can be taken to create awareness and show what the organizations does. Participant # 8 also made a very interesting point by saying *we are having a generation shift now, getting younger people, so this could be relevant after a while*. They are also thinking about using Facebook for job notifications.

Participant #9 thought that it was going to be a good idea for all of their upper secondary schools to have a Facebook Profile because students, teachers and parents can get information about what was going on, collaborate, and so on. It was a little bit difficult for Organization E to achieve this because at that time organization E was not on Facebook and their employees went on saying that *the regional council is not on Facebook, so why should we use it (Participant #9)*. The organization also provides a cultural card for young people between the ages of 13 to 20, to get free access or a pay a lower cost to attend many different cultural activities. This cultural program has a Facebook page. They also have an archeology page on Facebook, where the research findings from archeologists in the region are discussed. Participant # 9 also discussed the generation shift amongst their employees, for example most of their employees (mainly teachers) are between their mid-20s and mid-60s. One of the reasons why the organization uses YouTube is that, they could also post the videos on their websites and on Facebook making it more accessible but another reason is that not everybody likes to read, Participant #9 said that some people were happier listening.

### ***Applications***

Organization A has a Facebook account for the University, for international students and for the IT department – ex. IT help. The organization also has a Twitter account but it was not



being managed at the time of the interview, *it's just an automatic twittering (Participant #1)*. The organization also has a YouTube and a Flickr account and most of the organizations social media accounts were set up by Participant #1. The university is also on Instagram now. Participant #3 mentioned that their university's library has a blog as well as the carrier center. *The carrier center encourages these students to blog about their experiences and the process, how it is to finish as a student and get out there. How to get a job and how they are managing the process (Participant #3)*. Participant #3 also mentioned using doodle when she gets in touch with businesses or universities that don't share a calendar with organization A. They also use Google docs with a university college as well.

Yammer is being used by Organization B to get feedback from other employees in the company, even though Participant #5 thinks that it was not successful. When I asked him why, he said *I use Facebook, LinkedIn and Twitter and I don't think adding an additional channel to check daily is... I think there is a limit to how many channels you want to use and internally we use the intranet (Participant #5)*. He went on saying that one can comment on the intranet articles and that it is kind of has the same function of a social media channel. Organization B also did a seat belt campaign on YouTube and embedded it on their website, give the press the right to publish it on their pages (the press pages) and so on. They have a campaign on Facebook directed to youths called speak up, where youths are encouraged to tell those driving recklessly to stop.

Few of the social media platforms that Organization C is using actively to reach their users are Facebook and Twitter. They also have few videos on YouTube. To be specific, organization C has five Facebook accounts:

- The organizations official Facebook account: however it was shut down because the organization is reevaluating the goals of this page, and will be back with their new measures.
- Parental benefit: This focuses on answering questions on parental benefits.
- Talent for the future: assists children and young people to improve on their talents. For example they ask young people what do they think will be important in helping them choose their career. It is a collaboration between the governor's office in Telemark, Organization C, the region council in that municipality, NHO, KS, LO and five other municipalities.
  - They discuss drunk driving, how to get a summer job, marriage, etc.
- And two other accounts focusing on youth and international job.

Organization C has 5 Twitter accounts, they give out information concerning the organization with links attached linking back to the organizations website with more information, few inquire and responses, etc. There are also some dialogues going on there. Their YouTube channel is not that active, it was about multiple advertisements about parental benefits.

In organization D,; several governors are using blogs however, the branch that I investigated will not be using it because they think that it is too time consuming and that they are not at this point yet. The main platforms being used by them is Facebook and Twitter, they also have a YouTube account where they posted some information video about newly elected politicians. However, Participant #8 stated that YouTube *is a bit time consuming if it is going to be done professionally*. They also have few representation tasks where they share or give out things; she felt that Instagram could be a good channel since it supports pictures and little text. She also mentioned that the Prime minister's office is using Instagram and that there isn't that many public organizations using it right now.

Organization E has a Twitter account, a YouTube account, a Facebook account and Flickr account. Participant #9 said that they haven't started using Flickr extensively yet and that it was due to the fact that they had ongoing projects with the intranet. They decided that they could put their official photos on Flickr even though they have it on their web page, it could be even more accessible on Flickr. Organization E is also planning to use Instagram in the future, (...) *a lot of photos could be promoted very easily (...)* (Participant #9). Organization E is also using Wikipedia, there is a story about their regional mayor and they did not write it. There isn't a photo of him as well and they have a photo of him and believe that they have more back story, so they should be doing the writing. Most students written essays usually check Wikipedia, *so it is important for us to be there as well as to moderate and to give information about things that we are stakeholders' in* (Participant #9).

### **Principles**

*A lot of the time I think when people ask questions, other students also come in and answer these questions* (Participant #1). He went on saying that few students were also being paid to monitor their social media channels, mainly student representatives. They are used at the beginning of the school year, when new students have the most to ask.

Organization B is collaborating with: one local municipality, Organization D, and Organization E on a project called "I'm driving Green". The project has a web page and a Facebook page, and people can log in and get points for the distance travelled with their bicycle to work, the bus or by walking. Prizes are given to individuals with the most points and the organization with the most points in relation to the number of employees. They also intend to use this collaboration as a strategy to get more people to follow them quickly by spreading their information through collaborating organizations.

The key principles for most of the organizations seemed to be participation, collaboration, social networking, collective intelligence, peer production, crowd sourcing, rich user experience, etc.

Participant #8 stated that they are hoping on getting response to the things that they publish but this also means that they should be able to start up a dialogue by formulating their post in a way that they will get feedback.

Participant #9 believes that few of the same mechanisms that will stop people from participating in large groups, will also stop them from participating on social media platforms and that those the actively participate in huge gatherings will also participate on social media platforms. She also mentioned that getting an answer doesn't necessarily means that is everybody's opinion and that some people could be silent. Participant #10 mentioned that over the past few years, journalists do not go in depth into stories anymore and that most of the time it was about the heading. *And to real engage, the story has to reach the individual in a way that he/she will get interested to participate* (Participant # 10). He went on saying that Twitter is limited to 120 words and that it could be a bit difficult for one to form an opinion about a story after reading 120 words. However, in such cases, one can link it to another channel where people can find the basis to form an opinion.

### **Technology**

Participant #3 discussed a bit about their organization integrating a chat system with their request management system as well as Facebook, so that they could be able to better manage everything on one screen. She went on saying that by doing this, they will be able to better

manage everything; *someone will be watching it all day because it will be a part of our job description, and that is where we are working.*

*We have also launched a new internet page and one of the reasons for doing that was so that we could easily incorporate social media into the web page (Participant #9).*

### **4.3.3 Operations**

The Operations are based on several activities, depending on the organization's choice of applications, the manner in which they use the applications and so on, ex. Commenting or authoring. The operations from all organizations are presented below.

After organization B won the price for good road maintenance, *I produce a video that we put on YouTube just for that occasion. We got the two local and regional newspapers in Skien and NRK to put it on their pages too, so in three days we got 4000 views on that video, and it was only for that week (Participant #5).* On the seat belt Facebook campaign page, they have about 50 000 likes which people pledged to always use their seat belts by clicking like.

The parental benefit Facebook page have about 6803 likes, the types of question/topics that Organizations C is willing to answers to is also there, opening hours which is during the working hours of the organization, most often questions asked, photos, etc. There is a lot of commenting going on, active participation among users and the organization, links going back to the organization websites, likes of comments and posts, one can share information with friends or on their own timeline, etc. Well it is possible to subscribe on YouTube, see the amount of views, likes and dislikes in the form of thumbs up and thumbs down and so on.

Participant #9 said that when they started using Facebook she asked the users to vote on the various themes that they wanted to hear more about and education won by far. She also discussed that, by looking at Facebook statistics, one can learn a lot for example: their Facebook statistics show that most of their followers are between the ages of 30 and 55, the ages above 55 are mostly women and from 18 to 30 are mostly boys. She does not really know why it is like this but from the statistics they received, they probably need to do something that will attract more young females and older male.

### **4.3.4 Management**

Management is based on several activities, depending on the organization's choice of applications, the manner in which they use the applications and so on, few examples include: strategy, monitoring, guidelines, employees' role, privacy, and so on.

Participant #7 want on saying that he believes more and more organizations will start using social media and that is very important to customize the use of social media to the government organization in question, because government organizations are usually different from one another; for example: the police, the road administration, etc.

#### ***Strategy***

Participant #2 is working on a publishing plan; she said that they need to have an annual overview of what is going to be done. They do not want to publish frequently because users will get tired of the post. She went on saying that they usually have information that is repeated every year for example: the deadline for student application is on the 15 of April

every year. They will also have information and announcement about concerts at the student pub, news from the local newspaper -- if the university appears in the local newspaper they intend to share that information, etc. When I send the transcript for checking she said their publishing plan was finished and that they were working on a media-plan, what she called a strategy document.

Participant #2 said that if they did not have anything to publish, they will ask questions that will keep the dialogues going, for example: what is your day like at the university. *There should be something to motivate the people, because the motivation is not big enough yet (Participant #1).* Participant # 3 also mentioned the publishing plan and that social media or Facebook to be specific, is more informal then formal. She went on saying that they will (...) *also evaluate to see if the news is social media or web interesting or that we should publish it on both places. So that is our strategy so far.* Participant #4 said that they also have to be aware of what type of answers can be given in a public forum because there are public information laws in place and they will need to follow them as well. As a strategy Participant #4 said *I'll recommend the use of an external organization, this could also be important in relation to continuity: if someone quits, transfers, or due to changes within the organization, etc. an external partner ensure continuity – stability that everyone agrees with.*

One of the strategies used by organization B is that they got their employees to like their pages on Facebook and by doing this; they reached the friends of their employees.

When I asked Participant #7 what he thought about the use of social media by most government organizations, he said that some organizations just join social media to be a part of it and in such cases the goal or reason for using social media will be more difficult to achieve because of the manner in which it is being used, will be working against its goal. You can't just open multiple accounts without using them, after a while the use will diminish. *If you intend to use social media, you should have a long term plan and have a strategy in advance that will last over time because it is very easy to start up within a few weeks and lose the entire point or reason after a while (Participant #7).* He went on saying that other organizations are getting better at this like the Police; *the police are very good at using social media especially with the use of Twitter, they post rapid Twitter messages on recent cases and situations that need rapid updates (Participant #7).* Organization C social media implementation was done gradually on a trial and error basis, after which it was further developed. One thing that was learn from here is that the more the organization post, the more activities and if nothing happened, the lesser it will be used, Participant #7 concluded.

Organization D tried to keep everything on their website and then get people from other channels to visit their website. They decided that individual stakeholders will use the Facebook Application and the group of stakeholders will use Twitter. Even though they are aware of some of their individual users or group users to participate in either of the platforms; for example, individuals that tweet will be used to spread their messages, ex. re-tweeting. They also decided not to handle cases on their Facebook pages because they have an archive system and going through the comments on Facebook to get it into the system will be time consuming. However, there is an archive law on what can be stored or shouldn't and because of this as well, they will not be handling case on Facebook. When it comes to negative comments, organization D said that they will reserve their rights to delete negative comments, things that they will delete will include personal information like social security number, etc. and direct messages will be send to the individual stating that the post was deleted for their

safety. Other things that seemed to be harassment, racist, etc. will also be deleted without further notification or comment on why they did it.

On Facebook, organization D decided not to have long posts; *it shouldn't be in a way that those that are following us get tired of the post (Participant #8)*. She went on saying that some people believe that there should be one post everyday but she thinks that there should be 2 catchy posts a week then having five just to have something there. Another strategic reason for using social media was that a hurricane took place where all of their servers were and their infrastructure and organization's website was down for about 2 to 3 days. She suggested that social media could be an alternative in such a case as well as to reduce the internet traffic to their website if it did get heavy traffic.

When I ask Participant #8 whether they had other related strategies for using social media, she said (...) *we don't know exactly where to draw the line until we get few examples on what we have to do*. They couldn't be sure that they will post this or that amount because it might varies from week to week.

Participant #9 said that they would like to attract more people, but not just any how because their main focus is that their users should actually be interested in the things that are on the social media platforms. They also intend to be fairly serious meaning that they could use smiley face and that should not minimize their integrity. *When we do have a little bit of humor we tend to get more and more response (Participant #9)*. She went on saying that if you do not have a picture, you might not as well post and that if you had a short video that was even better. *People like that a lot and it is quite time consuming if you are going to go through the whole film bit, but at times a picture can be enough (Participant #9)*. Organization E will use social media as a part of their communication, even though they are still in the learning phase (trial and error), they are still acquiring new competence and experience *because social media is still relatively new and our main goal is to figure out the optimal way to use it (Participant #10)*.

### ***Monitoring and social media management***

In organization A, the service desk is responsible for monitoring and managing social media because their present job description is closely related and best suited for the use of social media. Participant #1 is being used as a technical guide, for example if those that are managing or monitoring the social media accounts want to carry out some technical task on the channels. He also said that from the statistics on Facebook, there has been a lot more activities now than the last three years. Participant #2 said that she and three other employees collaborate on what to publish, when to publish, who the main targets are; ex. Students, employees, researchers etc. *We don't want to have too much information every day, people will just unlike (Participant #2)*. Their main reason for having multiple people doing their monitoring and management is because multiple people have different perspective and area of interest. She also said that some student groups are more active than others, so they will have to balance the information that they publish for the various groups. Participant #2 also said that *if we are going to answer anything on the wall it has to be the correct information because if you say the wrong thing to one student, you can make up for it but if you say the wrong thing to 5600 people, it's a disaster. So everything we post has to be correct*. And that if they (the service desk – responsible for managing their social media channels) were uncertain about anything concerning the faculties, they will call the faculty in question and asked for the correct answers. When I ask participant #4 how often they monitor their social media platforms this was his response, *mainly in the morning when we come to work and in*

*the afternoon when we are about to leave, but we also check in between the rest of the time while we are at work. Participant #3 mentioned that they get notifications as well, so they don't have to sit and monitor all day. One of the things that participants haven't really understood yet is that someone is at the other end of the conversation that they are having but that person does not have the response to every answer and it is not someone from the top leadership that is sitting there (Participant #4).*

Even though they do not delete anything, participant #2 said that they are also supposed to answer every question that they received. *We had a question from students from the elementary schools on how do you become a brain surgeon or something similar, and I asked my boss are we going to answer this. Am I going to use my time and then she said yea, every question that comes to us has to be answered, in a polite way of course. And maybe try to direct them to the university of Oslo, the might be better at answering this question (Participant #2).* She also said that about one hour after posting something they get about 1700 views, as an administrator one can go in and see. Participant #3 said that they (...) *also get statistics e-mail, I think every week, we get statistics about the statistics from the last week for example; how many likes and what was the best, etc.*

Most of organizations B's Facebook accounts are being managed by the central office in Oslo and smaller projects that are being worked on locally are being managed by the organization's office, in that location. Participant #5 went on saying that the main reasons why they have one account, for example on YouTube is that, it makes it easier for them to check the quality, the requirements for the videos, and so on. For example, he check the copyrights at his local office and send the video to Oslo, they are responsible for the technical bit.

Participant #7 mentioned that it is the communication department in Oslo that is responsible for their many different social media accounts and that the image of organization C for example, their Twitter account and they (employees in other municipalities/sub branches) assist the communication department in Oslo by giving suggestions. In Organization C, the information that is to be shared is normally for the entire country and not restricted to a single county.

The communication group in organization D will be responsible for social media but they will also use the ICT representative to their group for technical support, for example; tell them about new technology. They will also need to respond very quickly on their social media channels, with e-mails one can wait 3 days but on Facebook 3 days is too long. Participant #8 also discussed that the communication group will act as an editor and that the people will also be rotated. The reason for this is that they don't want people responsible for social media to leave and then the entire social media program stops for a while or cease to exist. And by having this type of rotation, she will also ensure that more than one person has the level of competence they need to consider themselves to be successful.

Participant # 9 said that she heard about local municipalities that shut down their Facebook profiles, *I don't know in what sort of sense but the content became negative and they did not want it public and the only way to actually get rid of it was to shut down the whole thing.* She went on saying that such action could ruin in a long time work and in many ways sounds like panic. Organization E has about 10 people that can publish things but it is only participant #9 that can moderate things on Facebook. The reason why she wanted for more people to publish was that, organization E is a very big organization with different areas of expertise, so the more they are the better chance they will get to cover more grounds. Participant #10 is mainly

responsible for Twitter, he is present during political meetings and post on Twitter as it happens; to newspapers, radio stations, TV stations and at the same time publishes to the organizations website.

### **Guidelines**

Participant #1 said that those managing or monitoring their social media platforms (...) *don't discuss things like politics, etc. because once you answer you are answering for the university (Participant #1)*. When I asked participant #2 whether they had rules and regulations she said, *no, we ask each other*, Participant #2, participant #4 and two others. She also mentioned that they will try to create a new guideline with their publishing plan. The university has a campus at two locations and it is a bit difficult for those managing the social media platforms to know what is going on at both campuses, because of this they have representatives from each location.

*We don't have clear guidelines yet, but we have general rules for the use of images, language use, to be polite, etc. (Participant #6)*

Organization C has a business strategy which includes a communication strategy that the use of social media by the organization is a part of. Their central guidelines were created basing on how they were to proceed with the use of social media. *This was done so that it could be a part of the organizational routine or practice and so that people within the organization did not manage or handle social media differently because what is important was that the organization C, is seen as a single organization and that it has to be recognizable, no matter which branch one find themselves in (Participant #7)*.

- The organization's guideline is based on three references: 1) the guideline for privacy in social media (15. May 2012) 2) from KS "Roadmap for social media in the local government, June 2012" 3) Difi "guidelines for social media in the government".

The guidelines included: The purpose and scope, responsibility (who), limit (how much information, what, etc.), the goal, the role of the organization and employees, guidelines, etc. Crisis management, behavior (tone and language), evaluation, etc. were also among the guidelines.

Participant #9 said that she had a meeting with the politicians on the day of the interview and they wanted to know what they (the social media team) had in their guidelines: what was their reason for using Facebook because they hadn't really been involved and they (the politicians) wanted to know more about it. Organization E has a social media guidelines, participant #9 said that they have to revise it as often as needed because every time they change or start using a new social media, they might change their focus and it is also an ongoing process. She said that they do not present specific answers in their in guidelines, however they say what should be focused on; tell employees what to think about and so on. Her reason for choosing this strategy was that *"Social media are very general in how they work, you can actually use them very widely and your way of using social media aren't necessarily more correct from my way of using them. And if I make rules, I might exclude your way about working on them and they might be just as good but just different"* (Participant #9). She concluded by saying that being conscious about what you are doing and why you are doing it, is more important than actually saying you should be doing this or that. Participant #10 said that it was almost impossible to control these social media platforms because it is connected to the individuals understanding of social media as well as their behavior and that this is still a dilemma.

### ***Information sharing and privacy***

Organization C deals with a lot of sensitive information, so they have to be very careful with access to information and the information that they share. *The contact with most users will be so sensitive that it will not be possible to discuss in an open forum (Participant #7)*. However they have dialogue groups where users can ask questions and receive answers and the information is not deleted afterwards because many users often wonder about the same things. By doing this, they have to look out for privacy concerns, check the safety of the information they publish, etc. They noticed that people usually write more than what they should and that they usually fixed it by removing privacy information. He added by saying *sometimes people can be a bit reluctant with their personal information (Participant #7)*.

### ***Credibility***

Organization C has a good credibility, when it comes to the information that they provide. When I asked him whether the entire organization was involved during such a change, he responded by saying *the organization is committed to and is good at creating awareness, usually a representative is appointed to receive and discuss the needs/suggestions of all employees, in each district (Participant #7)*.

### ***Employee Role***

Participant #8 discussed that *in our communication plan it is clearly stated that you have to know who you are, who you are friends with on Facebook, etc. and that you may be seen as a professional even when you are just being a private person on a social media platform*.

Participant #9 said that Facebook is free to use a part from her time and that one needs to understand their roles as an employee, the organizations, role in society, the politicians roles, etc. otherwise those using the social media platforms will get a mix match and that could be problematic. Participant #10 discussed few challenges surrounding the political parties and the democratic system in Norway. He went on saying that even though the majority makes the rule and that there is also some sense of loyalty, there are situations where employees do not agree with the politicians decisions. *Where are you to set a boundary; that will be suitable seen from the employees' perspective, the employer, the political leadership, versus the officials? Are you to go out and make a decision against a decision that have been made by the politicians who are your employers and runs your organization? And it is here we have few dilemmas with the use of social media in a way because we have freedom up to certain level (Participant #10)*

### ***Resistance***

When I asked Participant #6 whether there has been any resistance, this was what she said, *the leader for the communication staff wants every road construction to have a Facebook page, and few of the projects and project leaders don't want to do this because they believe that this does not suit their needs. So yea, there is a bit of resistance*. When I asked her about what she thought their reasons for saying no was, she said that: most of them (the project leaders, project groups) were not on Facebook, it could be scary for them and they thought that they might lose control.

### ***Ethical Problems***

Participant #1 explained a story about some ethical issue that occurred at the university, he said that a seminar was arranged at the university and it was a bit religious. Few people criticized the university on the organizations Facebook page, for renting the facility to that particular religious group. This problem escalated and even appeared in the newspapers.



However, the university chose not to respond to this on Facebook but after it got to the press, the director had to get involved. The director's statement was that anyone is free to rent the university's facilities and that the university does not get closely involved with these arrangements. The comment concerning this was not deleted but no one from the organization commented or responded to it at that time. Participant #3 said that few of the restaurants in the city wanted them (organization A) to post discounts and offers, information about coming up concerts, etc. on their Facebook page. *I think it is ok because these are some of the good things about social media that is, it is social and not a one way channel. It is a marketing place where people can meet from different arenas, so as long as it is not harmful or negative to the university then it is ok (Participant #3).*

Participant #4 said *one of the problems we have been facing with the private sector or businesses is that, sometimes people try to advertise on our Facebook walls, for example; now we have a 20% discount for this product, etc. They try to reach students with offers and it keeps us wondering where, are we to set the boundary.* He went on saying that having a lot of activities on their Facebook page is nice but sometimes to place these cases within or outside of what is acceptable, is very difficult.

*I think there was an occasion where a participant was dissatisfied with something and wrote in a very provocative language (Participant #6).* Participant #9 said that Facebook kinds of own everything that you put there, and there are a few ethical questions about this. She also mentioned that few slimming products advertisements showed up on their Facebook page and they did not want them there.

### ***Trust***

When I asked Participant #1 whether their information is trusted by their users this was his response, *I think they do, I think they trust the source and that the information that comes from our sources is reliable. That is just my opinion maybe the students think differently (Participant #1).* Participant #6 said that they do get the impression that people trust their information and that this was also a part of their communication strategy that what they say has to be the truth and trustworthy.

### ***Knowledge Management***

*Social media is sort of an ongoing project where every day I learn something new about how to use it, how to promote it, etc. (Participant #9).* She also mentioned that they did an external consultation and the consultant carried out several studies on the use of social media by local municipalities and due to this he was able to score them on content quality, etc. To analyze the score on content quality, he looked at how many responses they got on discussions, likes, shares; to see how many activities they got around what they put out. And what the external consultant said to Participant #9 was that *you don't want to be on Facebook and not participant or say that you don't care about the responses, because the whole thing about Facebook is sort of a give and take sort of media.*

### ***Awareness***

Participant #9 mentioned that she conducted few training/workshop at their organization because most of their employees use social media privately but some of them were still trying to figure out how it could be used at work.

### **Security**

*What we are doing now is that these pages are just linked to the university account, so we haven't had problems with hacks or so (Participant #1).*

### **Copyright**

Participant #2 mentioned that the local newspaper had two stories about student exchange program about the university and how it could look really attractive on ones CV. These two stories were closed on the newspaper's site and needed a subscription to be view. She said that she thought about posting the stories on Facebook but she thought that it was illegal and decided to ask the international department. The manager of the international department told her no, and that she should send a request to the newspaper. She asked the editor at the newspaper to open the story so that she could share it on Facebook because students were the target group and the editor told her that he will open the story in two weeks. *So we have to step carefully because we can't use other people's product, we have to be aware. That is why they close the news in the first place, to earn money (Participant #2).*

### **Collective Intelligence**

Participant #3 said that she uses social media because she has got 2 to 300 friends on here friends list and that she is sure that someone there knows a bit more than she does. She went on saying that she was struggling with Photoshop and send out a message on her personal page and got two responses and a phone call in ten minutes – saying that they were there to help her. *It is 300 times your own knowledge that is out there and if you can share that, it's positive (Participant #3).* However she said that she worked for one of the municipalities previously and that if you don't know what or aware of what you are asking for, you might get more than what you want. *They had a plan to develop an area and they were open up to public suggestions and it got really nasty. And they just had to shut down their entire Facebook page because it was so crowded and people were coming with complains and accusing each other, etc. I think that you can use it but use it wisely (Participant #3).*

## **4.4 Related Findings**

The findings from all Organizations are summarized into the key mechanisms and main categories of the DOM framework shown in the table below.

**Table 15 Analysis summary of all Organizations**

<b>Key Mechanisms</b>	
<b>Planning</b>	<b>Findings</b>
planning	<ul style="list-style-type: none"><li>- Time to implement</li><li>- Who is going to be responsible for what, how is it going to be used</li><li>- Social media strategies: information sharing</li><li>- Unanimous use and number of social media accounts connected to a single department or service in the organization</li><li>- Target group identification, information, etc.</li><li>- Transformation area</li><li>- Demand-pull: drivers, principles, applications</li><li>- Operations: deleting comments, posting information, etc.</li><li>- Monitoring and social media management: who, how, when, what</li></ul>

	<ul style="list-style-type: none"> <li>- Guidelines: the role of the organization and employee, official and private, privacy, etc.</li> <li>- Number of social media channels to use, the type of information to be shared on each channel</li> <li>- Changing with technology over time: from paper to digital to participative engagement/social media</li> <li>- Stakeholder analysis</li> <li>- Formal strategy</li> <li>- Communication plan/media plan</li> </ul>
<b>Stakeholders</b>	<b>Findings</b>
Citizens	<ul style="list-style-type: none"> <li>- Children and youth, parents, the unemployed, generally most of the people seeking services from organization C, elderly drivers, young drivers, students,</li> </ul>
Government	<ul style="list-style-type: none"> <li>- Talent for the Future Facebook page: cross-agency collaboration among multiple government organization: ex. Organization C, five other municipalities, Education, politicians, government employees</li> </ul>
Businesses	<ul style="list-style-type: none"> <li>- The press, TV stations, fishing, radio stations,</li> </ul>
<b>Transformation Area</b>	<b>Findings</b>
Internal	<ul style="list-style-type: none"> <li>- Facebook groups for upper secondary classes, Yammer as a micro blog,</li> </ul>
External	<ul style="list-style-type: none"> <li>- External user groups: citizens, government organizations, businesses,</li> </ul>
Relational	<ul style="list-style-type: none"> <li>- Government organization: cross-agency collaboration, a Facebook group for all communication advisors for different government organizations.</li> <li>- Users answering other users, ex. students</li> </ul>
<b>Demand-pull</b>	<b>Findings</b>
Drivers	<ul style="list-style-type: none"> <li>- Reach a lot of users/target groups in a short time with little or no effort,</li> <li>- Collaboration; identifying and resolving problems through participations before it get out of control</li> <li>- Information sharing, promoting awareness ex. Road projects</li> <li>- Going where the user are</li> <li>- Responding quickly to users in the language that they understand</li> <li>- Spreading information effectively and reaching many</li> <li>- Open to user participation and suggestions that could make them better</li> <li>- Helping users to get more acquainted with government organizations; through participation, collaboration,</li> <li>- Generation shift: younger employees, future generations, etc. Ex. are more open to using social media</li> <li>- Job notifications</li> <li>- Services</li> <li>- Social media channel variation: ex. YouTube – people could watch and listen instead of reading.</li> </ul>
Principles	<ul style="list-style-type: none"> <li>- Participation/engage users – users commenting, dialogue</li> <li>- Collaboration – cross-agency collaboration</li> </ul>

	<ul style="list-style-type: none"> <li>- Social networking – the organization is reaching out to users, likes, etc.</li> <li>- Collective intelligence – participants discuss, share information with each other</li> <li>- Peer production – employees from different branches in Organization C make suggestions to the Oslo office.</li> <li>- Crowd-sourcing – children and youths are being asked collectively on Facebook what do they think will be important in helping them choose their careers.</li> </ul>
Application	<ul style="list-style-type: none"> <li>- Facebook, Twitter, YouTube, Yammer, LinkedIn, Blogs, Instagram, Flickr, Wikipedia, Doodle</li> </ul>
Technology	<ul style="list-style-type: none"> <li>- Integrating social media with the organizations website</li> <li>- Integrating social media with a chat system</li> </ul>
<b>Operations</b>	<b>Findings</b>
	<ul style="list-style-type: none"> <li>- Likes, Commenting, Posting Photos</li> <li>- Linking: ex. links back to organization’s website</li> <li>- Share information with friends (tagging friends) or on your time line</li> <li>- Subscribe</li> <li>- Views on YouTube video</li> <li>- Vote: ex. like or dislike on YouTube videos</li> <li>- Statistics</li> <li>- Search</li> <li>- Extension – ex. possible people that you may know or like to be friends with</li> <li>- Signals – for example: one can get updates on Facebook about topics that they are interested in.</li> </ul>
<b>Management</b>	<b>Findings</b>
Strategy	<ul style="list-style-type: none"> <li>- Customize the use of social media to meet the needs of the organization and users</li> <li>- Reduce the number of social media accounts and increase the level of activities because the lesser the activities, the lesser the use</li> <li>- Have a long term plan and strategy</li> <li>- Started up on trial and error basis’</li> <li>- Used cross agency collaboration as a strategy to get more users to follow them quickly</li> <li>- Post should be formulated in a way that it will start up a dialogue</li> <li>- Embedding YouTube videos on the organizations websites, Facebook pages, other organizations web pages: ex. The press.</li> <li>- Getting their own employees to like their social media pages and reaching others through their employees</li> <li>- Not handling case on Facebook</li> <li>- Managing privacy, ethical issues, etc. ex. Deleting social security numbers posted by users,</li> <li>- Using social media to reduce internet traffic on the organizations website</li> <li>- Trial and error</li> </ul>

	<ul style="list-style-type: none"> <li>- Users should be interested in what the organization post</li> <li>- Organizations should be fairly serious</li> <li>- Use photo and videos to generate more activities</li> <li>- Organizations need to figure out the optimal way to use social media</li> <li>- Publishing plan</li> <li>- Strategy document</li> <li>- Motivate users</li> <li>- Distinguish between social media and tradition media publications</li> <li>- Follow national laws</li> <li>- External consultants</li> <li>- Those managing should have job descriptions closely related to the use of social media, ex. Service desk</li> </ul>
Monitoring and Social Media Management	<ul style="list-style-type: none"> <li>- Getting a response does not necessarily means that is everybody opinion</li> <li>- Managing the length of what is being posted</li> <li>- How often should the organization post</li> <li>- Big organizations with many branches performing similar activities should have a central management for their social media, ex. One Facebook account for IT support, one for student exchange, one YouTube account, etc.</li> <li>- There should be rapid responses and feedbacks as compare to e-mails</li> <li>- Multiple people should be responsible for social media</li> <li>- Balancing the information being published, not too much or little, this should also apply to publication between departments</li> <li>- Give the right answers</li> <li>- Check notification in the morning when one arrives at work and in the afternoon when you leave as well as the time in between, notifications are also being used</li> <li>- Be polite</li> </ul>
Guidelines	<ul style="list-style-type: none"> <li>- The organization should have a routine and strategy so that everyone in the organization can handle social media similarly</li> <li>- Have a purpose and scope for using social media, find out who will be responsible, have a limit, have a goal, the role of the organization and employees, the employees role as a private citizen and as an employee, have guideline, crisis management, behavior (tone and language), evaluation</li> <li>- Create new social media guidelines</li> </ul>
Information sharing and privacy	<ul style="list-style-type: none"> <li>- Sensitive or personal information should not be discussed in open forums or shared by users</li> <li>- No specific answers should be in the guidelines, instead what one should think about when managing social media</li> <li>- There are laws governing privacy, legal discovery</li> </ul>
Credibility/Trust	<ul style="list-style-type: none"> <li>- The information that the organization provides should be trusted</li> </ul>

	<ul style="list-style-type: none"> <li>- Trust and credibility should be a part of the organizations communication strategy</li> </ul>
Awareness	<ul style="list-style-type: none"> <li>- Social media should be made aware throughout the organization.</li> <li>- Few employees do not know how to use social media for work purposes</li> </ul>
Employee Role	<ul style="list-style-type: none"> <li>- It is important to establish the roles of the stakeholders: employees, employers/organization,</li> </ul>
Resistance	<ul style="list-style-type: none"> <li>- Few of the causes for resistance seems to be: employees did not see how social media was relevant to their job, insecurities, loss of control seem to be other factors for resistance</li> </ul>
Ethical Problems	<ul style="list-style-type: none"> <li>- Provocative language, Facebook owns everything, unwanted advertisements</li> <li>- Have a strategy for managing ethical issues</li> </ul>
Knowledge Management	<ul style="list-style-type: none"> <li>- Organizations learn continuously by using social media, external consultations, learning from the mistakes of others,</li> </ul>
Security	<ul style="list-style-type: none"> <li>- None of the organizations seemed to be having security problems</li> </ul>
Copyright	<ul style="list-style-type: none"> <li>- Make show what you are publishing is yours or if you have the right to</li> </ul>
Collective intelligence	<ul style="list-style-type: none"> <li>- It is possible to get multiple time ones knowledge</li> <li>- Be careful what you ask for</li> </ul>

#### 4.4.1 A brief summary of related findings

Participant #6 suggested that the use of social media is important because you can get in direct contact with the target group very quickly as compare to having an open meeting and getting everyone to the meeting. She concluded by saying that such an open meeting could be difficult to get the participants to the location and it also requires a bit more resources then Facebook.

*Social media is about the voice or message of the organization to its participants but it is also about the organization's ability to listen (Participant #4).* Participant #4 concluded by saying that there are a lot of things to take into consideration because while you are considering new strategies, new problems arise.

There are a lot of findings presented in the case analysis; however most of the coded data could be placed under multiple categories and sub categories. And sometimes in order for a concept to make more sense different coded data was placed under different categories. For example the statement from participant #6 above could be placed under drivers but it could also be used as a strategy or a means to increase participation. There was also a lot of repeated data for example: organizations are using social media to reach targeted groups and engage user to participate. Similar repetitions were eliminated from the case analysis but placed in the related findings.

## 5. Discussion

The objective of this chapter is to discuss the findings, both the key mechanisms and the main categories discovered during this study on how government organizations can use Web 2.0. The results from the empirical data will be linked to the prior research to better discuss the findings on the use of Web 2.0. The discussion is based on the related findings from all five government organizations investigated and is not aimed at any of the five organizations specifically. Each and every key mechanism, main and sub category answers specific underlying questions as well as poses questions that the organization need to ask themselves and they also support how government organizations are to use Web 2.0. The sub chapters below present the key mechanisms and main categories of the DOM framework, a brief description from table 14 could be used to understand the key mechanisms and main categories of the DOM framework and few of the questions to be answered or that organizations need to ask themselves, are presented below each element.

### 5.1 Key Mechanisms

The stylish triangle in the middle represents the Key Mechanisms which are elements or factors that should positively influence the three main categories: Demand-pull, Operations and Management. The three key mechanisms discovered during this study are:

Questions:

- *Planning*: basically, every kind of planning related to the organizations use of social media.
  - What are the strategic goals to the organization's use of social media?
  - What is their reason for implementation?
  - How can they best explain their intentions to the rest of the organization?
- *Stakeholders*: a stakeholder's analysis basing on the supply and demand chains should be conducted.
  - Supply chain: self-evaluation – who is the organization or organizations providing these services?
  - Demand chain: who are the target groups? How will they be engaged?
- *Transformation Area*: internal, external and/or relational
  - What is the area of transformation?

#### *Planning*

Planning did not seem to be mentioned in the literature review as much as it was mentioned in the empirical findings.

G. J. Baxter et al. (2011) suggested a Web 2.0 implementation framework, the key categories of the framework were: planning, support, development and implementation. The findings from the empirical data shows that most of the organizations started up on a trial and error basis or without a preplanned strategy because the concept of social media is very new and they had fewer or no examples to follow. By going through these trials and errors, they were able to establish few concrete practices which had to be done through some level of planning and through discussions between co-workers running the organization's social media channels. Few of the planning that was done, related to who was going to be responsible for what, how were their social media channels going to be used, the target group/stakeholders analysis, the information that was going to be shared and more. The findings show that some level of planning was carried out, not necessarily in the beginning of the organizations use of

social media, with the exception of one organization, which started a bit late and had few examples to followed.

Charalabidis et al. (2010) said that when it comes to participation, government administrations should take the first step towards increased involvement of citizens by going to the web locations each group is using for interaction, instead of expecting the citizens to move their activities onto the official government spaces. The findings showed that most of the organizations are aware of this and that this is a part of their plan and drivers. One organization mentioned that going to these social media channels should not be done at the expense of their main communication channels. Even though it is part of their plan to go to channels where the citizens are, they also have a strategy that suggests that it should be done to a certain extent. Another organization mentioned that, a new channel is being established every time and that the citizens keep moving from one channel to another. This means that they will have to follow the citizens everywhere, however this is part of the internet and they should not be afraid to use it. The two concepts mentioned from the findings supports the prior research but they also make an interesting point that new social media channels will come and maybe go, and that the people will move from one channel to the next, so it is very important to have a channel that will always be, a channel that the organization has full control over.

Nam (2010) discussed that governments have been evolving over time, for example in the 1960s, government focused on the need to keep information – have control, whereas today there is a need to co-create – crowd-sourcing. While Leahy and Broin (2009) said that SAP recently declared their direction to incorporate blogs, wikis, YouTube and so on into their enterprise product. The findings also suggested that government organizations have changed over time, for example they move over from using paper based information to becoming digital, where almost everything is being done electronically. Both the theories and the findings suggest that, organizations need to plan ahead. They should ask themselves these questions: in a few years from now how will things be, in relation to participation and the use of social media? Sap is planning on integrating it, will the organization be prepare to use Web 2.0 if it became a part of their enterprise system. There is also a generation shift taking place, where the younger generation is more open to using these social media channels than the older generations. Organizations need to plan ahead for these situations and set the basis on how they should be use.

Planning can be applied to all parts of the DOM framework as well as influence the outcome. For example security and privacy; Oehri and Teufel (2012) suggested planning amongst four security management steps: for example planning should be used for the definition of targeted culture, target groups, measures, and so on. Organizations could also plan by conducting stakeholder analysis on who their target groups are and how their privacy will be protected.

To sum up, organizations should carry out certain amount of planning for several reasons, few of which are:

1. Every main category of the DOM framework can be planned and the reason for this is to have a formalized documentation, a reminder why and how the organization planned to use social media. By planning organizations can influence and support main categories in the framework. For example Management: organizations need to plan how their social media channels are going to be managed.
2. Trial and error: one of the organizations said that they will not know exactly what to do until that particular situation occurs. So not every situation can be pre planned and



some has to be done on trial and error basis. Trial and error should be used to support planning but the most important aspect to remember is that, different individuals monitoring these channels will encounter different situations. Every individual monitoring should be involved in the planning in order to truly establish a concrete practice.

### ***Stakeholders***

Stakeholders play a very important role in the organization's use of social media. The findings suggested that all of the organizations involved in this research used social media differently. An organization's use of social media is strictly tied to its stakeholders, which makes it a bit context specific. For example, the university focused on students: how new students can get the right information that they need while the road administrations focused on giving information to drivers and information about the roads being used. Lubna Alam and Walker (2011) also discussed how several Australian government organizations used social media differently, which is clearly based on their stakeholders. The two concepts above support each other but in addition to this, the findings also show that a single organization could have multiple stakeholder groups with different needs, and that there should also be a division between them. For example: the university has a Facebook page for international students, another for IT help. By splitting up different departments, targeted stakeholder groups and so on, the organization reduces the complexity of their use of social media and will become more focused on the single task at hand. In the findings, the supply chain stakeholder is the government while the demand chain stakeholders were: citizens, other government organizations and businesses.

Linders (2012) presented a citizen co-production perspective in the age of social media which included: citizen sourcing (C2G) -- citizens reporting, providing information to the government; Government as platform (G2C) -- ex. open book government and do it yourself government (C2C) -- ex. citizens monitoring citizens. The findings also support Linders (2012) co-productions perspective: for example, the road administration gets feedbacks on the condition of the road (C2G), students respond to other students' questions on the university's Facebook page (C2C) but most importantly almost every information can be linked back to the government organizations website (G2C). Social media made this co-production perspective a reality but in order for users to truly participate, transparency is very important because the users need to know what they are talking about. This means that for users to truly participate, they need to have the right information, know where to find the right information and so on.

A stakeholder analysis should be conducted to establish the organization's basis for using social media. The stakeholders play a very important role because these services are being provided for or by them; the use of these channels needs to be tailored to their needs. Splitting up different stakeholder groups within the organization will also increase the organization's focus, simplify its management's needs and establish a closer connection with each targeted group.

### ***Transformation Area***

Ndou (2004) discussed three critical transformation areas of e-government: internal, external and relational which were also supported by the findings. The external transformation area seems to be mostly used while the internal transformation area seems to be used less. One of the main reasons why the internal transformation area was focused on less was because most of the organizations had an intranet. Their intranet had features like sharing and commenting

on documents and so on, social media like features. Due to this, the need for using social media internally by government organizations appeared to be less relevant. However, there are few organizations that are using social media internally most of which were being used informally, ex. Closed Facebook group for employee extra-curricular activities. There were other exceptions as well, like the upper secondary schools using a Facebook group to ask math teachers for assistance with their math problems. The findings showed that organizations also used a joint collaboration with other government organizations to forward a common interest. All of which supports Ndou (2004) three critical transformation areas.

Singh et al. (2010) stated that the implementation of such a service (Social Media) could be seen as a new communication channel with an internal component supporting employees' networks and team work, as well as an external component for providing a platform for customer/users opinions. Another example I could give from the findings is the student recruitment representatives Facebook group, they share information and work together by discussing their challenges and strategies used when they visited upper secondary schools to represent the university. And when it came to the external transformation areas, all organizations focused on giving information and getting feedback from participants. Well this concept was not applied to every social media channel, which mainly depended on how the individual organizations were using social media.

The impact of web 2.0 on the public sector can be seen in four areas: improvement of the public sector's transparency, policy making – a new form of participation, improvement of public services and finally improvement of knowledge management and cross-agency cooperation (Bonsón et al., 2012). The findings support the transparency and a new form of participation aspects. One of the organizations encouraged live posting/tweets during their political meets which can be access by the public, the press and so on. Instead of waiting for these stories to appear in the newspaper or on the organization's website, the public has access and can follow these stories on Twitter as well as give feedbacks and write their opinions. The organizations did not really mentioned anything about knowledge management but this will be elaborated on in the management category. Osimo (2008) mentioned that cross-agency collaboration could be used by Web 2.0 to support internal policy making-process for example: streamlining inter-departmental or inter-government consultation. Another example where cross-agency collaboration in relation to the streamlining of inter-departmental or inter-governmental government consultation; is where all of the different government organizations' communication advisors created a Facebook group so that they could support each other. They ask questions about communication related topics among other things.

Identifying the transformation area can also assist the organization to make better plans and strategize, for example: if the transformation area is external, the organization could better prepare what information to share, look into privacy issues – which information is to be made public and so on. The transformation area can also influence how the organizations use social media because internal focus means a different user group/stakeholder then external or relational.

## **5.2 Demand-pull**

The demand-pull should enable the organizations to establish a reason for using social media by understand how, why, what and so on. The sub categories under the Demand-pull are:

Questions:

- *Drivers*: the organizations reason for using social media, the reason for users to revisit
  - Why use social media?
  - What will encourage participants to come back to these social media channels?
- *Applications*: truly understanding the different types of applications being used by the organization
  - Which applications will best suit the needs of the organizations?
- *Principles*: common characteristics observed from the use of social media
  - How are they going to use social media in relation to: collaboration, participation and so on
- *Technology*: the technological concept the provides structure and support
  - If the need arises, what type of underlying technology will they need for integration, to further develop require services or combine multiple services?

One of the main categories in the DOM framework, the demand-pull is based on the conceptual framework discussed by Kim et al. (2009). In his framework he discussed the technology push, ex. how the technology is available today and the only thing the demand side needs to do is use it. I tried to look at the Demand Pull basing on Kim et al. (2009) from the perspective that organizations should truly understand the need of having a presence on a social media platform before using it.

### ***Drivers***

There are several government organizations adopting Web 2.0, but there are also a number of constraints which make government agencies reluctant to embrace social media; an example by Lubna Alam and Walker (2011) is that there is a lot of non-academic articles and reports that cover the private sector while the discussion on government use of Facebook tend to occur on blogs and government specific websites. This concept was also supported by the findings even though all of the organizations investigated were using social media. Most of them mentioned that when they started using social media, they did not have concrete examples to follow and that they were just trying it out to see what was going to happen. Most of the organizations learned through trial and error and the experiences that they acquired were put into a more strategic plan afterwards. There is still a bit of hesitance within some of the organizations as well as resistance that limits the use of social media within certain departments. Most of the resistance with in the organizations is based on insecurities and the reluctance of the head office to use social media themselves, both of which can be resolved with more academic articles or research in this field of study.

Few of the drivers from the literature review included:

Using Web 2.0 or social media to promote honesty and transparency to users and business partners, wisdom of the crowds, co-production or joint development by the government and the public, democratic participation and engagement, rapid sharing of collective intelligence, customizability, transparency and openness, obtaining user opinions, reading opinions and recommendations of others, finding out job or career information, engagement and innovation, reducing costs of advertising, telling people why they exist and what they do, etc. (Singh et al., 2010) (Bertot et al., 2011) (Patten & Keane, 2010) (Leahy & Broin, 2009). Most of the prior research here is supported by the findings few of which are listed below.

The findings show that every organization in this research had multiple drivers, reasons for being on social media platforms. Few of which included; using social media channels to link users back to the organizations website – traditional channels, reaching user of all ages, engage and encourage feedbacks while monitoring situations through users before they get

out of hand, sharing information and using a common language that everyone can understand, going to a channel where the users are, and so on. The top three drivers in the findings were going to a channel where the users are, linking the users back to the organizations website and sharing information and getting feedback from the users. S. L. Alam et al. (2012) discussed that one of the main purposes of the tourism Australia Facebook page is that the Australian tourism needed to have a presence, which is also supported by the concept of going to the channels that are being used by the users.

One of the informants even said that social media can make the organization to be more focused and the reason for this concept is that organizations cannot write as much as they do on a traditional media ex. the organization's magazine or website. Let's take Twitter for example, with the limitations on the amount of characters that can be written, the information has to be short, informative and interesting to the users. Human resource professionals are also using social networking sites, for example recruiting or hiring new employees, the most relied on is LinkedIn (Leahy & Broin, 2009). This theory is also supported by the findings; other organizations investigated also used Facebook as a means of recruiting. G. J. Baxter et al. (2011) discuss why educators have become attracted to using Web 2.0 tools, namely wikis, blogs and online forums and how students benefits. An example was also given about the university, where some students handed in their assignments on blogs and their carrier center uses formal students to discuss on blogs about their whole experience of leaving student live and become a hired professional in their area of studies. All of which supports the prior research.

Fink (2010) suggested that it is necessary to understand the acceptance or non-acceptance of traffic rule changes by road users before they are implemented and that it can be achieved with web 2.0, through collaboration, communications, content development, and so on. One of the informants also mentioned that they could use social media to capture the scope if there is resistance against something that they were working on. And by doing this, it will be easier to resolve the problem before it got out of control or had economic consequences. Which supports the concept of Fink (2010), understanding the acceptance or non-acceptance of users.

The drivers are very import because all organizations need to have a reason for using social media channels; they can't just be there (on a social media channel) because it is available. The organizations' users will go to these channels for a reason and the organization needs to satisfy needs of their users, if not, users wouldn't have a reason to return. The organization having its reasons or drivers for using social media is one thing but it also needs to have drivers for users by giving them a reason to come back but more importantly participate. Basing on these two concepts, drivers should be based on the organization's needs as well as the target group interest. The question is "what is in it for me?" and if all stakeholders cannot get a satisfactory response, they could look at it as a complete waste of time. The stakeholders will play a very important role here because the drivers focus on both the demand and the supply chains interest and willingness to participate. The transformation area and planning will be of great influence as well as the other main categories.

### ***Applications***

Kim et al. (2009) discussed several Web 2.0 applications categories: Social networking site (SNS) ex. Facebook, MySpace; sharing – YouTube, Flickr; Blog – Twitter; Syndication – RSS, Atom; Mashup; Collaborating – Wikipedia. Most of these categories were discussed as part of the findings except mashup.

Another example from de Kool and van Wamelen (2008) was about the YouTube videos about the presidential candidates in the United States. YouTube is being used by most of the organizations investigated but not as much as they have been using Facebook. One of the examples from the findings about YouTube is that, the road administration creates animation videos about newly constructed roads before they are finished and post them on YouTube. Their reason for doing this is to let the public know the layout of the newly constructed roads before they are opened for used. By doing this they reduce the traffic on newly opened roads because almost everyone knows how to find their way around. There are multiple examples presented in the findings about information videos placed on YouTube, all of which supports the concept of de Kool and van Wamelen (2008). Most of these information videos are also being embedded into the organization's website, being posted on their Facebook pages, and they also give the rights to other organizations to share their videos, for example: the press – on a news website, to spread their information quickly and reach more people.

Larsson and Moe (2011) stated that an American student who was jailed in Egypt, used Twitter to signal distress; another example was the messages sent by a passenger on the US Airways plane that crashed into the Hudson river. Kongthon et al. (2012) mentioned that social media such as twitter has shown potential to be an effective tool for Thai citizens to obtain and disseminate up-to-the-minute information. One of the most common used of Twitter seem to be that organizations investigated used it to pass on information to the press, even though few of them did have other users like other government organizations, businesses, individuals and so on. There was an example I mentioned earlier about the live Twittering from one of the organizations, which supports the concept of Kongthon et al. (2012). And as for Larsson and Moe (2011), several findings supports their concept, an example is the welfare organization. The organization provides information about their many different services as well as links back to their websites, where users can find information about the whole story.

Larsson and Moe (2011) also categorized the use of Twitter identified into four categories, namely: Daily chatter, post regarding daily events and thoughts; Conversations using the @ character; Sharing information where URLs are distributed via the post and Reporting news. All of which are also supported by the findings, but another positive aspect of Twitter that Kongthon et al. (2012) mentioned is that Twitter allows traditional journalist as well as citizens reporters to provide instant situation reports. One of the organizations mentioned that they also intend to use individuals to re-tweet their post and further spread their messages.

Few disadvantages of Twitter like messages, is using wrong (#) hashtags, misspelled, left out hashtags making it harder for others to follow, etc. (Larsson & Moe, 2011). All of the organizations that were investigated did not mentioned this, but logically, I think that it is a possibility and that organizations need to remember this, when they plan their strategy. One of the informants mentioned something similar but it was in relation to the organizations website. The organization has a hyphenated name for example: AB-C; and most people search for them usually leaving the hyphen out. So they had to create several possibilities basing on the statistics gather to be more reachable through various search engines.

Wikipedia was not really being focus on by most organizations, with the exception of one informant who said that their political leader is on Wikipedia and that they were not the ones that wrote about him. They have more information than whoever that did write about him and even a picture that they could post since there wasn't any. The informant said that students

use Wikipedia to do their assignments or at least research at time, so they needed to get involved with things or situations that involved them.

The main social media applications or channels that were mentioned or used by organizations were: Facebook, Twitter, YouTube, Blogs, Yammer, LinkedIn, Flickr, Wikipedia, Doodle, Instagram and of course there are several others like MySpace and so on that were not mentioned. The main purpose of this sub-category Applications is to help the organization truly investigate the various social media applications that are available and choose the right application that will suit the needs of both the demand and supply stakeholders. Chang & Kannan (2008) discussed in S. L. Alam et al. (2011) stated that the Web 2.0 environment can be divided into three categories: tools that are communication focused – ex. podcast and video logs; interaction focused – ex. social networks sites and blogs; and service focused – ex. mashups. This suggest that there are several different social media channels with different levels of communication or interaction, so organizations need to strategize because their application selection should help them in achieving their goals. According to Singh et al. (2010) it was established that specific Web 2.0 technologies better serve particular industry sectors, such as LinkedIn is for professional organizations.

Choosing applications randomly wouldn't help the organizations interest, an evaluation needs to be made and this could be carry out on a trial basis or within a small group in the organization. The findings showed that all organizations used similar applications with the purpose it was intended for; however the communication on these channel were targeting specific stakeholders. For example, YouTube is meant for sharing videos which was done by all of the organizations that used YouTube accounts, but the road administration uploaded a video to help drivers while one of the political organizations uploaded a video about their candidates to help voters.

### ***Principles***

The findings showed that most of the organizations reason for using social media was to share information and engage users. Like Leahy and Broin (2009) discussed, “Web 2.0” prefers to use the “term participative web” since it empower users to contribute to developing, rating, collaborating and distributing Internet content and customizing Internet applications. Findings showed that in all of the organizations, users did engage in different types of dialogues as well as shared information with each other. For example, one of the informants said that students did answer each other's questions on their Facebook page. The customization of internet applications on the other hand, did not seem to be put in to practice, even though few organizations mentioned the integration of their social media channels with other systems, they were still in the planning stage.

Web 2.0 enables citizen participation in a democratic public sphere by fostering openness, inclusivity and the opportunity to debate issues of common concerns (McGrath et al., 2011). Zheng et al. (2010) discussed that all social media has most or all of the following five characteristics: participation, openness, conversation, community and connectedness. The concepts from both McGrath et al. (2011) and Zheng et al. (2010) were supported by the findings, few of the organizations social media channels support the concept of collective intelligence. Participants were able to discuss with each other, employees from different branches were able to send their suggestions to the head office; communication advisors from multiple government organizations were able to stay connected and discuss communication related issues.

Cisco uses Web 2.0 technologies to collaborate and connect with customers, partners, communities and employees (Singh et al., 2010). There was a few cross-agency collaborations taking place, for example the communication advisors from different government organization collaborating on Facebook by sharing information and asking each other questions; another example is about the youths were multiple organizations join together to help them (youths) and also engage them in topics like who will they like to become as professionals. There is also an example about the Facebook group for employees only. The findings supports the concept from Singh et al. (2010), even though it is from a business perspective. Euske (2003) discussed that there are several differences and similarities between the private and public sectors, the example from Singh et al. (2010) could be seen as a part of the similarities.

Social networking is an important form of user participation in which the goals are to build and maintain social connections for satisfying social needs, career and personal needs (Kim et al., 2009). This theory shows that in order for participants to visit and engage; there should be some kind of benefit in it for them. The findings also suggest that participants need to have a reason to come back to these social media channels. And as for the government organizations, the social aspect is that they need feedbacks and the opinions from their participants to improve their services, have a closer contact with their users and so on.

In order for users to really engage and participate, have cross-agency collaboration, peer production, etc. there should be some amount of openness and inclusiveness, the users has to be really interested in the topics and also know enough about it to feel confident enough to talk about it in an open forum. One of the organizations mentioned that it could be really challenging for participants to engage, if the story is not detailed enough to interest the participants – for example Twitter. One of the strategies that most of the organizations seemed to be using was to link the story back to the source, usually their website were the whole story is being provided.

### ***Technology***

Kim et al. (2009) stated that Web 2.0 technology layer enables the technological concepts that provide structure and supports the Web 2.0 principle. All of the organizations did not seem to have reached to the stage where they had to develop or focus on the technology. A part from the few embedding of YouTube videos on their websites and posting on their Facebook page, nothing concrete was in place. One of the informants discussed that they were going to integrate a chat system with their request management system and Facebook, so that they will be able to management everything on one screen. The project was still too far in the future for me to get any concrete answer or information on the technology that will be involved. Another organization also discussed that they launched their new internet page so that they could easily incorporate their social media into their web page. I was also unable to acquire specific information about the technologies involved as well. Murugesan (2007) discussed several Web 2.0 development tools like WordPress for building blogs which was also used by the carrier center at the university.

The findings to support the technological concept was very thin, in my opinion, I think that organizations should still understand the underlying technologies that supports or can be used to further develop or customize the various social media channels that they are using. By understanding the technology, they could better understand how these channels work and maybe the security features as well which could also reduce the insecurities about using these

channels. The most important reason for understanding the underlying technology will be to further develop or integrate and even customize when the needs arise.

### 5.3 Operations

The operations should enable the organization to better understand how to use or how social media is being used. The sub categories of operations depend greatly on the choice of applications, the manner in which the organizations use their social media channels, and so on.

Questions:

- What can be done on these social media channels, ex. Commenting, ratings, and so on?
- How can it be done?

McAfee (2006) used the acronym SLATES to indicate the six components of Enterprise 2.0 technologies. According to McAfee (2006) the acronym SLATES should be used to create the ease of use (of social media) and let the knowledge acquired from participation emerge. The SLATES acronym represents: Search – looking for information; Links – the ability to build links between the information; Authoring – the ability to create, update and remix information; Tags – the categorization of content by a single one word description; Extensions – automated categorization ex. if you like this you will like that; and signals – the use of RSS feeds to alert users about updates or new contents.

The entire Operations category is based on what can be done on these various social media channels in relation to the activities that can be carried out. For example one can comment which relates to authoring the ability to create update or remix information. The findings showed that SLATES related activities were being used on the social media channels by the organizations investigated. For example it was possible to search for their organizations Facebook page(s), links were being used to take users back to the main stories or the organizations website and so on.

bin Husin and Swatman (2010) discussed that the six technology components of the acronym SLATES can be expressed as a four-category model known as the 4Cs approach:

- Communication: ex. discussion forums, blogs
- Cooperation: ex. media sharing – create, publish and share files like pictures and videos with tags, comments via web based applications.
- Collaboration: ex. wikis, etc.
- Connection: ex. social networking

All of which are also supported by the findings for example: authoring/commenting on blogs, publishing and sharing file like photos and videos. bin Husin and Swatman (2010) concept is also supported by the sub-category Principles in relation to collaboration, connection, communication and cooperation.

Other activities found in the prior research related to audio blogging and podcasting, tagging and social bookmarking, multimedia sharing, and so on (Nath et al., 2011) (de Kool & van Wamelen, 2008). Audio blogging and podcasting were definitely not among the activities being carried out on the channels of the organizations being investigated. Either they haven't found it necessary or they haven't reached that stage yet. Other operations discovered among the findings were: sharing information with friends by tagging them or posting on their timeline, subscription, the number of views on a post, statistics – Facebook provides statistics



about the various activities from the week before that is only accessible by a Facebook page administrator.

However Wattal et al. (2010) stated that it is still unclear which one of these attitudes lead to increase involvement, for example: the commenting and ratings feature on YouTube, which one of the two increases participation. One of the informants stated that if one posts something on Facebook, you have to have a picture or not post at all. The reason for saying this is photos generated more activities than just text, for example: you will get a lot of likes; people tend to share and comment. The informant said that it will even be better if you post a short video, however this was a bit time consuming if you try to edit, fix the quality of the video and so on. The findings here suggests that photos or videos generates more activities than text, which partially answers Wattal et al. (2010).

The operations category is important because, if the organization understands the various activities of their social media channels, they will be in a better position to provide the right information that will generate response, they will also know what types of response to expect and how best they can manage their social media activities. For example: they share a photo on Facebook; they have to be aware of the copyright, whether users can further share it, see how many views it generated (basing on the statistics) to know what type of information the users are interested in, users will comment—they will need to check for privacy issues, profanity etc. By having a better understanding of the operations, the organization will be able to use the right channel to provide the right information as well as manage these channels accordingly.

## **5.4 Management**

The management category should enable the organization to support and of course manage their use of social media. The sub categories of management like operations are based on the selection of application and the manner in which these applications are be used as well as related management issues.

Questions:

- What is to be managed?
- Who should do the managing?
- When should the channels be managed? How often?

Organization's culture takes some time to change, and in order for Web 2.0 activities to take effect; there is a great need for openness in the organization, trust, flexibility, collaboration, different kinds of awareness, etc. as well as strong leadership (Seo & Rietsema, 2010). Few of the organizations investigated faced similar problems for example: the head office of one organization told another branch to use social media and what the branch said was, if you are not using social media why should we. Most of the time leaders have to lead from the front, so organizations have to show strong leadership by being a good example and not by sitting in the back and telling other branches what to do. Group of project leaders also resisted using social media because they did not see the reason to and also because of their insecurities, namely loss of control. Like Seo and Rietsema (2010) stated, organizations culture takes some time to change, so the organization cannot just impose new practices and routines without really explaining the purpose or creating some level of awareness. There should be certain level of trust, flexibility from management and employees as well as collaborations. The following prior research and findings suggests that there are several elements or activities that need to be managed to ensure the smooth utilization of social media by government

organizations. Findings also show that different government organizations tend to use social media differently, this means that some government organization's management activities may be different from others but there are still some similarities. Few of which are discussed below.

### *Strategy*

Fink (2010) suggested that small pilot projects be given to staff or a small group with flexibility to experiment could be used as a starting point. This particular concept was used by most of the organizations investigated with the exception of one, due to the fact that they started a bit late and had a lot of examples to follow. The organizations that started early did not have plans or a strategy on how they were going to use social media. They just started up on trial and error basis and after a while they started discovering and learning from different situations, which became parts of their plans and strategies. Organizations need to remember that social media is basically dealing with people and at times people can be unpredictable, so strategies need to be done on trial and error basis at times to ensure that they will work.

The six Australian Facebook pages that were investigated by Lubna Alam and Walker (2011) discussed that the participation varied across agencies some of which were being used for; announcement purposes, informing, involving type of online engagement, communication, compliance, recruitment, promotion and engagement and crowdsourcing. Findings also show that different organizations used social media different, mainly because their strategy was to tailor their social media use to the needs of their stakeholders. For example: the needed to give users the reason to come back while achieving their goals.

Like the strategy discussed by Kongthon et al. (2012) on the use of multiple sources, was also supported by the findings. All organizations investigate had more than one social media channel, which also give the users a choice. They could choice to follow the organizations on Facebook or YouTube, but one thing that organizations need to remember is that a user could choose to follow the organization on all social media channels. And if the organization repeats the same information on all channels, their users could quickly get bored. Distributing different types of information on different channels could be used as a strategy.

There was very little information about strategy found in the prior research; on the other hand the findings from the organizations did have a lot more strategies on how they intended to use social media. As a strategy, one of the organization said that they were working on a publishing plan; their reason for this is that they have many activities occurring at the same time every year but most importantly they needed to moderate the amount of information that was being posted so that they did not push too much information to their users. One of the informant said that if you push too much information on the users they will just unlike you on Facebook. There was also a mention of a media plan, what one of the informants called a strategy document. Having a publishing plan is a good strategy, because the organizations will be able to spread out their information over time. They shouldn't have to publish everyday just so that they could have something there, a few catchy posts a week should suffice like one of the informants said. Many of the informants said that at times it can be very difficult to start up a dialogue and by having a publishing plan; organizations will have a fixed activity for each week in addition to the activities that popup on the go. In order to keep the dialogue going, the organization has to be able to motivate the users to engage. They also have to be able to formulate their questions or articles posted in a way that it will generate response and keep the dialogue going.

One of the informants also recommended the use of external consultation and said that by having someone come to the organization and make recommendations could also reduce the number of resistance and ensure continuity. The reason for making this suggestion was that telling other departments within the organization what to do at time can be very difficult. They think that you (the departments during the monitoring) are not an expert on the subject matter and that you don't know what you are talking about. So by bring in an external consultant with a high level of expertise in this area will reduce their insecurities and ensure continuity because the strategy will be left in place in case someone at the organization quits. Another informant also said that they got a review from an external organization that focused on quality, the number of activities in relation to participation and so on. They ranked somewhere in the middle on the review chart and this give them the insurance that they were doing something right. It could be a bit difficult for organizations to know where they are when it comes to them using social media and external consultation could eliminate few of their challenges. However, government organization's use of social media is still relatively new and there aren't that many social media consultant firms. One of the informants also said that there were several other aspects that they encountered that were left out or that they had to deal with themselves. Like I stated earlier the use of social media can be unpredictable because the organization will be dealing with people, some things will be learned only through experience.

The findings showed that without the organization having a strategy or goal, they could forget the reason why they started up in the first place. Most of the organizations chose not to delete negative comments; they felt that by doing so, they could limit the level of participation because it shows them being bias. And their objective is to encourage the opinions of everyone. They concluded that comments relating to privacy, harassment issues, racism will be deleted without a further notice to the users. Most of the organizations also intend to use their social media channels a bit informal as compare to the organizations website, which is understandable. One of the informants said that on Facebook we will use smiley face and a bit of humor, which we cannot do on our organization's website. The informant also said that they were going to be fairly serious but also stated that the more humor you use, the more responses you will get. From the many examples given, it shows that strategy is necessary to ensure the organization's ease of use and that they reach their goals, in terms of using social media.

#### *Monitoring and social media management*

The main idea of government organizations use of social media is to engage or interact with the users, which means that they need someone to do the monitoring. Most of the organizations used departments that had responsibilities very similar to monitoring their social media channels, for example departments that dealt with information sharing and had direct contact with stakeholder groups. They already knew things like; you have to be polite, privacy issues. One of the organizations used members of their service desk and one individual from IT as a technical guide to do their monitoring. Another organization used two of their communication advisors plus nine others from different departments while another used their head office or a central management and all other sub branches send their suggestions. The informants said that their reason for doing this is that, their organizations is very big with a lot of different professions. And that it was difficult for a single individual to know every subject area or reach every department so they had to use multiple people. On the other hand, the service desk had about four members responsible for their social media channels and when they received a question that they did not have the answer to, they try to get the answer internally but mostly they referred the individual to the person or department. One of the

informants said that finding the answer internally can take some time, and sometimes you will have to go back and forth so it was better to just refer the individual to the right person.

Most of the organizations decided to use more than one person to do their monitoring, to ensure continuity, in the case of someone quitting, going on vacations or sick leave. Another reason for this is that monitoring social media at times, can be very complex and those monitoring will need someone else to talk to or discuss with. Another reason why organizations need to have more than one person monitoring and managing their social media channels is that, people understand things differently and have different perspectives most of the time. The more people monitoring, the organization will have a better chance to quickly understand how they should use their social media channels more efficiently, if those monitoring collaborate share their ideas and put it into their routines. S. L. Alam et al. (2012) stated that the Tourism Australia Facebook participation page is monitored by employees every fifteen minutes, to manually remove undetected profanity that Facebook filters missed. This concept is supported by the findings and in order to participate, the organization has to monitor as well but the prior research did not go in-depth, for example how many people were doing the monitoring or why more than one person should be monitoring. Most of the organizations said that when their users post something, they get a notification so they don't have to check very often. One informant said that they check in the morning when they come to work and in the afternoon before they leave, those are the priorities even though they also check in between these times. The majority of the social media channels had the same opening times like their respective offices, ex during working days -- 08:00 – 16:00. Users could ask questions and get response during this time.

Lubna Alam and Walker (2011) analyzed the post on several Facebook pages and they fell into five main categories: giving information, requesting information, positive comment, negative comments and miscellaneous – meaning anything not fitting into the above four categories. This is another reason why the organization needs to have people monitoring, to give information, give answer to requested information, monitor and manage negative comments. One of the informants said that if they are going to answer anything it has to be the truth because giving on person the wrong information can be rectify quickly but giving the wrong information to 5000 people could be problematic. Inquiries coming in needs to be answered and someone needs to ensure that the inquiries are being answered correctly. Singh et al. (2010) discussed that Web 2.0 technologies respondents indicated it was a major innovation in managing relationships with its stakeholders because it promotes interaction, collaboration and networking. The finding supports that managing social media channels can be challenging because sometime it can be very difficult to know where to draw the line, what is acceptable. For example: one of the informant said that some businesses started advertising student discounts on their Facebook page which they were a bit skeptical about at first but later felt could promote certain level of activities. One of the problems they are facing now is that how far is enough, even though right now the advertising is right within their acceptance limit. Well in my opinion, these are some of the situations that require a guideline or require the organization to go back and take a look at their strategy and see if this supports their interest and maybe the interest of the stakeholders.

Tsui et al. (2010) discussed few challenges one of which included Web Democracy: all opinions and content are equally valuable; this concept is misguided and undermines the notion of expertise. One of the informants for the university said that they got a question from an elementary student, who wanted to know how to become a brain surgeon. The informant asked her boss whether they are to answer such questions. The boss said yes, all questions are

to be answered and if you don't know the answer refer them to the source. The respond to the elementary student was, contact the university of Oslo they will be in a better position to answer this question, politely of course. The strategy of answering every question is positive; it ensures that there are no bias activities or the concept that some inquiries are better than others. In reality, there will always be better questions than others, but the organization is to encourage and engage users and not stop them from participating. I believe that the referring strategy should suffice and also answer the question to what extent they should encourage topics that are not related to their interest. For example, Freeman and Loo (2009) discussed that one of the challenges about blogs and wikis was: Avoiding information overload and keeping the discussion on the topics being discussed. The elementary student's situation applies here, for example keeping the discussion on the topic and referring can be used as a strategy to put a stop to it and switch back to the topic of interest.

Those monitoring also said that they had to respond quickly, they mentioned that social media is not like the traditional media, responding to an inquiry in three days is too long.

Opinion mining can be defined as the computational processing of opinions, sentiments and emotions found, expressed and implied in text, a concept used by firms to enable them to analyze online reviews and comments entered by users (Charalabidis & Loukis, 2011). Those monitoring and managing the organization's social media channels can use opinion mining to improve their understanding and provide better strategies, plans, guidelines and so on. Statistics could also be used to analyze how users are using these social media channels for example: what types of information or operations generate more activities or the amount of views on certain topics. There are several aspects of the organization's use of social media that is going to be carryout through trial and error; opinion mining and statistics can be used to provide better results. However, Senadheera et al. (2011) presented seven functional building blocks, among the seven was identity. The seven functional building block enables user to describe and examine certain facts patterning to the use of social media, for example: Identity – the extent to which users reveal themselves. Those doing the monitoring have to understand and use their judgment as to what extent users are willing to go to reveal certain details or participate honestly but more importantly they will also need to minimize the amount of situations that will make participants to be uncomfortable, of course basing on the organization.

### *Guidelines*

The prior research did not have any concrete discussion about guidelines; the findings show that having a guideline could be beneficial and promote a common organization culture on how government organizations can use social media. For example: organizations that had nothing to do with politics like the university did not encourage the discussion of politics on their page. They try to keep users on the topic and if those that I monitoring did answered a political question, it might be seen as the opinion of the university, so they did not. Most of the organizations did not actually have clear guidelines at the time of the interviews, but they were working on it and felt that it was necessary for the organization to have a common method on how they use social media. Most of those managing already had few of these routines in their daily job descriptions a part from social media, they had to be polite, use simple language that can be understood; which can also be used to manage social media. Some other aspects of the guidelines focused on: the purpose and scope; who will be responsible for what; how much information will be published, the goal, behavior (the tone and language that should be used) and more.

Having a guideline as I said, could be very important for establishing a social media culture throughout the organization. However, one of the informants mentioned that social media can be used very widely and that one person way of using it is not necessarily better than the next. So it is very important to keep this in mind that the guidelines are not supposed to control every aspect but leave room for those managing to be able to influence as well, basing on their level of experience. Communicating on social media means dealing with human behavior which can be unpredictable at times, so it is better for the guidelines to ask if you have thought about this instead of saying do this. Situations may never be the same as the guidelines suggests at times. Organizations also need to create a new guideline meant for social media; the traditional media guidelines and routines may differ from the ones needed to maintain the use of social media within the organization.

#### *Information sharing and privacy*

Web 2.0 also have a number of potential risk and drawbacks like authentication, regulatory and equitable issues, offensive content and censorship, public disclosure, information overload (Tsui et al., 2010) (L. Alam & Lucas, 2011). Like I stated earlier, all organizations were very clear that offensive contents will be deleted without further notice. For example, the publishing plan will be used to reduce the information overload by spreading the information over a certain period of time. Polaschek et al. (2012) discussed that information overload can be better managed by a range of different services publication, subscription, distribution, personalization and collaboration, which is also support by the findings -- publishing plan.

One of the informant stated that at times some users don't know the boundary; they even go to the extent of posting their social security number for example. And in such cases they will delete privacy issues and send a brief explanation to the user why it was deleted. Hardy and Williams (2010) said that there is a growing concern around the capability of the organizations to comply with legislation relating to privacy, data protection and legal discovery, some of which can be blame on externally hosted systems and often beyond the direct control of the organization (Hardy & Williams, 2010). These are some of the reasons why the organization needs to monitor the various activities on their channels, when it comes to privacy or legal discovery. One of the informant stated that there are laws in in place and we have to keep them.

#### *Employee's role*

L. Alam and Lucas (2011) presented an ethical triad for professional public servants namely the three states they can operate as: official, professional and personal. One example discussed by L. Alam and Lucas (2011) is leaking information received under official capacity as a private citizen could be problematic. The findings show that organizations are aware of this, one informant said that as an employee one have to know who your friends are and that you may be seen as a professional when you are just being a private person. Fink (2010) stated another concern is social risk, for example: employees response is taken to imply formal policy. This could also happen while an employee is just being a private person. One of the informants stated that you are an employee and all of your friends know that you are, even when you act as a private person wouldn't this still reflect on the organization maybe because they think that you have some inside information. So even with the division of roles and whit the employee knowing who they are at a particular time, they still have freedom up to a limit, but that should not stop organizations from establishing clear rules governing their use of social media.

### *Ethical problems*

There are several ethical problems that are associated with the use of social media and the organization has to manage and monitor them. Some users are visually impaired, have aging impacts disability, etc. (Leahy & Broin, 2009), how can they be included. Most of the organizations said that they are going to the channels where the people are and will try to engage a lot of people. What about those that are visually impaired. There are many different types of social media channels some of which can be used to reach specific audiences, ex. blind people with hearing capability, ex. audio blogs. These are some of the issues that need to be discussed in the organizations strategy, but having too many channels as well is not strategic. One of the informant mentioned that on their website they have features that can increase the text size and also read the entire page. Specific channels could be used to target disability groups so that they are not excluded.

Larsson and Moe (2011) discussed that blogs and similar online applications such as public discussion forums could be problematic because of problems like exclusion and others, heated arguments, or a great deal of anonymity. One of the informants said that one of the users was very dissatisfied and wrote in a very provocative language. Findings also show that there were advertisements of slimming product on one of the organizations Facebook page, which the organization did not support or did not even know how it got there. This could also be taken negatively by users depending on the content and also be seen as an association between the organization and the product company.

### *Trust/credibility*

Transparency emphasizes on the reduction of information quality between organizations and its consumers, with the main aim of gaining the trust of external stakeholders (Yang, 2012). Leahy and Broin (2009) mentioned that privacy concerns, untrustworthy content, lack of accessibility were among other challenges in using social media. Information being posted by the organization needs to be trustworthy because if the users don't trust the information the activities will surely reduce because it will just be a waste of time. One of the informants said that the users trusted their information and that it was also a part of their communication strategy, that whatever they had to say should be the truth and trustworthy. Yang (2012) said that trust issues are mostly related to trust in the technology or trust in the government. Due to the fact that all organizations were good on trust, the only instance in the findings that showed insecurities was with the project leaders that resisted a bit because they felt that they would lose control.

Liu et al. (2012) discussed four stages of transparency improvement, namely: increase data transparency, improve open participation, enhance open collaboration and realize ubiquitous engagement. Transparency can be used to increase the level of trust between the organization and users as well as increase the level of participation. The more transparent the organization is, the more the people will know about the organization. And the more the people know about the organization the better position they will be in to participate or engage. Pee (2012) presented a social media information credibility model with three main hypothesis (information quality, source credibility and majority influence) positively related to trust of information on social media and minor hypothesis (personal involvement and prior knowledge) affects the three main hypothesis. Basing on this concept the fact is that the people will trust the information being provided if the quality is good, the source is credible and if the majority believes in it, which is also influenced by personal involvement and prior knowledge on the topic.

### *Knowledge management*

Knowledge management (KM) is the process through which organizations generate value from the intellectual and knowledge-based assets (Nath et al., 2011). One of the informants mentioned every day she learns something new about how to use and promotes the use of social media. Two of the organizations also mentioned the use of external consultation, while almost every organization used a bit of a trial and error strategy. All of this knowledge acquired or being acquired needs to be managed, reused and the best way to do this is by embedding the knowledge into the organization's routine. The organizations did not give me any concrete answer about how they were managing the knowledge that they acquired and I believe that this is a very important aspect in using social media. Individuals learn and adapt to situations differently, if the individuals doing the managing come together and discuss their various concepts and strategies basing on their experiences, they will improve the use of social media within the organization greatly.

### *Awareness*

A survey conducted by Leahy and Broin (2009) showed that it is critical for the visually impaired respondents to use social networking sites like Facebook, MySpace, as much as sighted respondents. Looking at this concept from the users' perspective, most of the organizations do not have an awareness program and assumes that their users know about their social media channels. The reason why the visually impaired uses social media less than those that can see is because most of them are not aware and that these channels could be a bit challenging for them to use. If the organizations do not create awareness, the users will not know about their social media channels, like the visually impaired and will not use them. Most of the organizations had little symbols of the various social media channels at the bottom of their websites and on some of the websites you will have to navigate to find them. I believe that they should run campaigns to create awareness. One of the informants also said that most of their employees used social media privately and did not know how to use it for work, so they had to conduct a workshop to create awareness.

### *Security*

Singh et al. (2010) suggested that issues of security, cybercrime, vandalism and hacking, copyright and other problems associated with the internet are concerns that require serious attention. Oehri and Teufel (2012) mentioned that the damage to reputation through unprofessional conduct, loss of control, cyber mobbing, social engineering and malware attacks are also problems that need to be dealt with. Throughout the findings none of the organizations had any security risk in relation to their social media channels. This result was unexpected by me, however one of the participant said that none of their systems are connected to their social media accounts and that the accounts are just linked to the organization. So basically, it is just an account like any other user on Facebook; no systems attached which made sense.

Hardy and Williams (2010) discussed how failure to manage and protect digital information assets expose the organization to significant business and information risk. Few of which included: Compliance Risk - not being able to comply with required laws and regulation, ex. Data protection; Audibility Risk - not being able to verify and obtain assurance about the integrity of the information, ex. Incomplete document; Reputation risk – reputation damage due to the release of confidential or personal information, accidentally or deliberately and so on. Compliance risk on the other hand could be problematic for most organizations if they do not monitor or manage their social media channels accordingly, for example the removal of



social security numbers posted by users. There are laws in place that says otherwise, and organizations need to follow them. Due to the laws in place and audibility risk most of the organizations decided not to handle cases on their social media channels.

Hardy and Williams (2010) went on discussing that information security requires a greater emphasis on information mapping and on understanding who is creating what information, on behalf of whom and for what purpose. Which is also supported by the findings, specific information will be created for different target groups and the organization needs to be sure that no laws are broken. If the organizations create a publishing plan, they will easily be able to map up the information that is to be shared while keeping track of all of the information that is being shared. Like Oehri and Teufel (2012) said social media security culture must also be part of the overall organizational culture. And in order for the organizations to achieve this, guidelines have to be created to support a common strategy and embedded into the routines of the organization.

#### *Copyright*

Another challenge from Tsui et al. (2010) was Web Legal issues: online content and masups – legal problems concerning copyright of content may arise. One of the informants nearly posted an article from the newspaper on their Facebook page because it was meant for students. However, she didn't and contacted the editor of the paper later on who said that he was going to release the article in two weeks. There are many different things happening around the use of social media but the organization has to be aware of critic issues like copyright that may lead to a lawsuit. This also applies to photos, videos and so on, the organization needs to make sure that they have the permission to use or share contents.

#### *Collective intelligence*

Nam (2010) discuss that governments have been evolving over time, in the 1960s government focused on the need to keep information – control, whereas today there is a need to co-create – crowd-sourcing. However, Jain (2010) stated that there are few challenges when it comes to management, some of which includes: managing submission, loss of control, quality of the ideas, creating trust, etc. while Lubna Alam and Walker (2011) said that motivating users, reaching a large user base and quality of contribution could also be challenging. The concept of collective intelligence or crowdsourcing is unique and beneficial if an organization uses it correctly. One of the informants said that a municipality had a plan to develop and were open to the public for suggestions. In the words of the informant “it got really nasty and they had to shut their entire Facebook page down because people were accusing each other or complaining. I think you can use it but you will have to use it wisely”. The findings supports the concept that collective intelligence or crowdsourcing can be very challenging, so organizations need to know exactly what they are asking for and how they intend to go about this but most importantly be in the position to control the situation surrounding such collaborations.

## 5.5 A Revised DOM Framework

Below, figure 7 is a revised version of the proposed framework in figure 5, which displays the key findings, main and sub-categories of the DOM framework. The empirical data provided several findings that were not discovered during the literature review as well as the discussion and because of this, a revised version of the DOM framework became a necessity. The framework suggests how organizations can use social media; however the in-depth explanation and few of the connections between the categories have been discussed throughout chapter five.

This master thesis is based on the following research question:

*How can government organizations use Web 2.0?*

And in order for me to answer this research question, the DOM framework is proposed.

A revised version of the DOM Framework is illustrated in figure 7 below.

A DOM Framework for a Web 2.0 Government

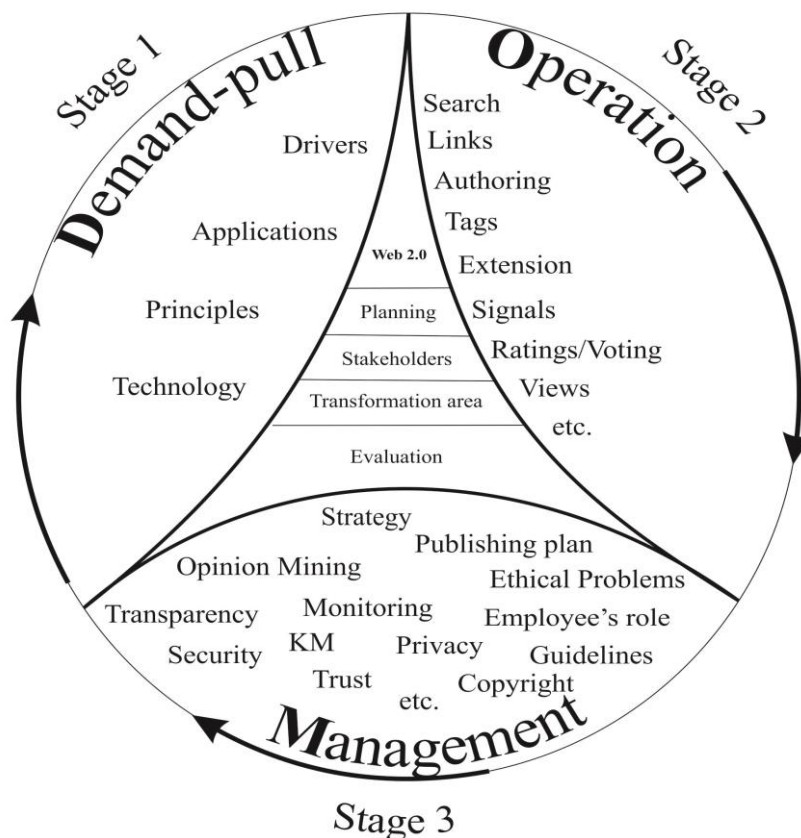


Figure 7 A revised DOM Framework

The revised DOM Framework starts with stage 1, the Demand-pull where the organization is to figure out how and why they need to have a presence or use social media channels. The Demand-pull has four sub categories: drivers, applications, principles and technology. The Demand-pull is capable of interacting or can be connected to the other main categories and mechanisms. Drivers can determine how stakeholders will use the social media channels; the applications selected by the organization can determine what types of operations to expect;

the applications selected can also determine how the organizations can monitor and manage their social media channels and so on.

Stage 2 is the Operations, which is the various activities that can be carried out on the social media channels. The organizations can use the Operations to best figure out how their selected social media channels can be used. The sub categories of the Operations are based on the social media applications selected. Few of the sub categories include: links, views, ratings, etc. The Operations can interact or are connected to the rest of the other main categories and the key mechanisms. Operations activity like authoring determines how stakeholders participate, which is also connected to the principles under the Demand-pull; the information that is to be shared by the organization ex. text, photos, links, needs to be evaluated and managed to ensure that copyright and privacy laws are kept.

Stage 3, Management, is meant to support all categories including the key mechanisms. There are many different elements and activities that need to be managed. Few of the management activities include: strategy, monitoring and managing social media channels, employees' role and so on. The Management category interacts and is connected with all other categories for example: the drivers need to be managed to ensure that the organization stays on track, the stakeholders and stakeholders related operations activities need to be monitored and managed, strategies and guidelines need to be managed as well.

The Key Mechanisms are placed in the middle because they are meant to influence the rest of the DOM framework and each other positively as well as support the three main categories: Demand-pull, Operations and Management. The Key Mechanisms are divided into three mechanisms but the fourth was identified, while explaining the DOM framework. The key mechanisms are: Planning, Stakeholders, Transformation Area and Evaluation. As I said earlier the key mechanisms can be used to influence and support the rest of the framework for example: planning can be used to support every main category as well as influence it positively; stakeholders are those doing the managing or those that need to be managed, the transformation area can also influence the drivers as well as the operations for example: internal communications may be less restrictive on the information that could be shared than the communication with external stakeholders.

I did not explain every possible connection between the key mechanisms and the main categories of the DOM framework because I was unable to go in depth to verify these connections and interaction and also due to the fact that most of the organizations investigated are still figuring out how to use social media.

The organization can start by going through stage 1 through 3 while focusing on the elements supporting each stage. For example they could start by asking themselves questions relating to each stage like the questions presented above figure 5, the proposed DOM framework. An example of stage 1 is given below; stages 2 and 3 can be done similarly in reference to the questions presented above figure 5.

Questions of stage 1 the Demand-pull could include:

- The reasons why the government organization need to be a part of social media -- the drivers
- Which applications will best suit their needs?
- Which one of the fundament characteristics observed from the use of social media channels, they are going to utilize? Ex. participation, collaboration

- And if the needs rises, what type of underlying technology will they need for further integration, to further develop require service or combine these services.

Answering related questions at each stage should establish how the government organization in question can use Web 2.0 or social media. The framework is shaped in a cycle because each one of these main categories can be reevaluated after establishing new drivers, selecting new applications, improving their strategies and so on. The cycle illustrates that the elements within the DOM framework needs to be evaluated constantly as need. One example is that after most of the organizations started using their social media channels, Instagram became popular and now most of them are thinking about using Instagram. This means that the similar process will be carry out beginning from stage 1 through 3 to start using Instagram. Before the organization take on a new social media channel, they could evaluated to ensure their present channels are being used correctly and if there were any lessons learned that could be implement to the new channel(s) or improve the old. Evaluation could also be done after every stage or at the end of stage 3 or at the beginning of a new cycle.

## 6. Conclusion and implication

The purpose of this thesis is to answer my research question and it is also based on a qualitative study. By conducting a literature review and using a concept matrix based on 43 articles and gathering empirical data based on 10 semi-structured interviews from 5 organizations, I was able to propose the DOM framework to answer my research question; “How can government organizations use Web 2.0 or social media?” Basing on the literature review and the empirical data, I was able to identify 4 key mechanisms and 3 main categories. The discussion shows that the key mechanisms are essential in supporting the main categories; and that the main categories suggest how government organizations can use social media, from different perspectives. A brief description of the DOM framework is concluded below:

- Key Mechanisms
  - Planning, Stakeholders, Transformation Area and Evaluation
- Demand-pull
  - Drivers, Applications, Principles and Technology
- Operations
  - Search, links, authoring, tags, extensions, signals, ratings/voting, views, etc.
- Management
  - Strategy, monitoring and social media management, guidelines, information sharing and privacy, employee’s role, ethical problems, trust/credibility, knowledge management, awareness, security, copyright, collective intelligence/crowdsourcing, etc.

The Key mechanisms are meant to positively support and influence the entire DOM framework. The key mechanisms are built on the following sub categories: planning, stakeholders, transformation area and evaluation. Planning is necessary but it should also be supported by trial and error basing on the experience of those managing the organization’s social media channels. Stakeholders should be used to support the organization’s reason for how their social media channels are being used, by influencing the Demand-pull, Operations and Management as well as other key mechanisms. The transformation area plays a key role because it can determine who the participants are, what type of information they will received, privacy and management issues surrounding the transformation area can be better discussed and so on. Evaluation should be used by the organization to learn from their mistakes, improve their processes and ensure that everything is going according to the organizations plan, strategy or that they are reaching their goals.

Demand-pull is meant to establish a reason or reasons and how the organizations can go about using social media. The demand-pull is based on the sub categories: drivers, applications, principles and technology. The drivers should promote the organizations interest and establish their reasons for using social media but more importantly get users to engage. The term “social media” should have more emphasis on “social” in order to promote drivers. Being social means it is a give and take kind of situation and organizations need to understand this. There are many different kinds of social media applications; this means that the organization has to make the right choice(s). The application or applications selected has to support the objectives of the organizations and different types of information should be placed on different channels so that participants do not get bored from reading or viewing the same information on all channels. When it comes to the principles, in order for the participants to engage, they need to have enough knowledge about the topic as well as the topic should be interesting and somehow beneficial to them for them to get involved and keep coming back to

the social media channels. And finally understanding the underlying technologies will enable the organization to better understand how their social media channel works and the organization will also be in a better position to integrate, customize or further develop to achieve their goals, if the need arises.

Operations is meant to help the organization understand the various activities of their social media channels, ex. what are the various activities, how can they be used, how should they be used. The sub categories of operations are based on the applications selected by the organizations: ex. links, views, ratings, etc. The operations focus on the various activities that can be done on the different types of social media channels. And by having a better understanding of the operations, the organization will be able to use the right channels to provide the right information to its participants as well as manage these channels accordingly.

Management is meant to keep the organization in line and ensure that everything is moving smoothly. Management is one of the largest categories among the three main categories because there are several aspects that the organization needs to manage. Few of the sub categories are briefly concluded. Strategy suggests how the organizations should handle the manner in which they use social media and it should support the organization's goals as well as all stakeholders' interests. It is important that multiple individuals manage and monitor the organization's social media channels to ensure continuity and that they could be able to discuss with each other in term of unique situations. Different people have different perspective and by having more the one person, could be beneficial to the organization. Guidelines can be used to establish a social media culture that should be embedded into the organizations culture to ensure a common use of social media throughout the organization. One of the most important aspect to remember about guidelines is that, there should be room for those monitoring to improvise because all situations cannot be predicted and might not have the same results every time. Guidelines should guide, ex. Have you thought about doing this and not you should do this or being too precise. In order for organizations to truly engage users, there should be some level of trust and credibility from the organization. Having certain level of transparency can be used to increase the level of trust among participants. And in order for participants to truly participant they need to know the subject area which is based on transparency, trust and credibility.

The discussion of the DOM framework and the figure of the DOM framework should create an overview on how government organizations can use social media. However, most of the literature review were in accordance with the findings from the organizations as well as differed but the literature review and empirical data supports the DOM framework on how government organizations can use social media.

The findings from this study was able to provide the DOM framework which provided a more detailed overview on important elements and factors that suggests how governments should use web 2.0. The findings of this thesis also fulfill a more theoretical as well as practical needs on the use of social media by government organizations. The most important findings of this thesis is that it answers the questions of why, how, who, when and what, in a single framework as to how government organizations can use web 2.0.

To conclude, I will say that the DOM Framework can be very useful for practitioners because the framework also illustrates and gives a graphical representation on how government organizations can use Web 2.0. To be more specific, I will suggest that government

organizations can use social media by going through the three stages of the DOM framework while using the Key Mechanisms to positively influence and support the three stages.

Stage 1 is the Demand-pull where organizations establish their reasons for using social media and the reasons that will encourage participants or users to return. They should also be able to select the social media applications that will support their goals, decide how they will participate in terms of information sharing or cross-agency collaboration and finally understand the underlying technologies that will ensure customization, integration or further development when needed. Stage 2, Operations ensures that the organization understands the various social media activities of their selected applications. In short what can be done, for example comments, links, which will enable them to better manage their social media channels. Stage 3, Management suggests several elements and activities that need to be managed. For example who will be doing the monitoring of their social media accounts, what information they will share, privacy issues, social media strategies, etc. all of which needs to be managed. The Key mechanisms are supposed to be used to influence and support the three main categories or stages. For example planning can be used on every aspect and ensure that all strategies are align. The cycle of the framework represents that all activities of the framework can be repeated as needed and also in relation to using new social media channels, reevaluating existing strategies and so on.

To answer the questions of when or when not to use the DOM framework, I will say that this is left up to the organization. I know that different organization are on different levels when it comes to the use of social media but it doesn't really matter what level the organization is on, there are several concepts and elements within the framework that is useful to all organizations. Part of answering this research question was to be able to generalize the results so that all government organizations at different levels can use the DOM framework.

## **7. Further research**

This study provided few theoretical additions to this area of research as well as suggestions on how government organizations can use Web 2.0. However, Web 2.0 is very complex and the scope and applications are constantly being developed or changing, even the different types of participation basing on the various social media channels. A longitudinal study will verify and keep track of this complex phenomenon that is social media. Research could also be done in other countries to see if they are using social media differently than Norway. I also recommend an in-depth study to further investigate for new or hidden categories presented in this study, due to the fact that this Thesis was completed in a semester. The in-depth study could also focus a bit more on the practical use of social media, however this could prove to be a bit more challenging, since certain aspects of social media or Web 2.0 could be context specific.



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## 9. Appendixes

### 9.1 Concept Matrix

Table 16 Concept Matrix Table 1

Authors	Geographic Location					Demand Pull				Type of Articles		Stakeholders				Transformation Area		
	Asia	Africa	Americas	Australia	Europe	Drivers	Applications	Principles	Technologies	C. P.	Journal Article	Citizens	Business	Government	Others	Internal	External	Relational
(McAfee, 2006)			x			x	x	x			x		x			x	x	
(Kim et al., 2009)			x			x	x	x	x		x		x			x	x	
(Singh et al., 2010)			x	x		x	x	x			x		x	x	x	x	x	
(Lubna Alam & Walker, 2011)				x		x	x	x			x	x		x			x	
(Leahy & Broin, 2009)					x		x	x	x		x		x				x	
(Charalabidis & Loukis, 2011)					x	x	x	x	x		x	x	x	x	x	x	x	
(Yang, 2012)	x					x	x	x			x	x	x	x			x	
(Charalabidis et al., 2010)					x	x	x	x	x		x	x		x		x	x	
(Wattal et al., 2010)			x			x	x	x			x	x		x			x	
(Nam, 2010)			x			x	x	x			x	x		x			x	
(Hardy & Williams, 2010)							x				x		x			x	x	x
(McGrath et al., 2011)	x	x	x		x	x	x	x			x	x		x				
(Kühne et al., 2011)					x	x	x	x	x		x	x		x	x	x	x	
(Fink, 2010)				x		x	x	x			x	x		x		x	x	
(Seo & Rietsema, 2010)					x	x	x	x			x	x	x			x	x	
(Patten & Keane, 2010)			x			x	x	x			x		x					
(Nath et al., 2011)			x			x	x	x			x		x			x	x	x
(S. L. Alam et al., 2012)				x		x	x	x			x	x		x			x	
(Jain, 2010)			x		x	x		x		x				x			x	
(Vaast et al., 2013)			x			x	x	x			x	x	x	x				
(Raisinghani, 2012)			x			x	x				x		x			x		
(Senadheera et al., 2011)				x		x	x	x		x		x	x			x		
(Pee, 2012)	x					x	x	x			x	x						

Table 17 Concept Matrix Table 1 continuation

Authors	Geographic Location					Demand Pull				Type of Articles		Stakeholders				Transformation Area		
	Asia	Africa	Americas	Australia	Europe	Drivers	Applications	Principles	Technologies	C. P.	Journal Article	Citizens	Business	Government	Others	Internal	External	Relational
(Stieglitz et al., 2012)			x			x	x	x			x	x		x				
(Larsson & Moe, 2011)					x	x	x	x			x	x		x			x	
(Tsui et al., 2010)	x					x	x	x		x		x		x		x	x	
(Kongthon et al., 2012)	x					x	x	x		x		x		x	x		x	
(Peedu & Lamas, 2011)					x	x	x	x		x		x	x	x		x	x	
(L. Alam & Lucas, 2011)				x		x	x	x	x	x		x		x		x	x	
(de Kool & van Wamelen, 2008)					x	x	x	x		x		x		x		x	x	x
(Freeman & Loo, 2009)			x			x	x	x	x	x		x		x		x	x	
(Murugesan, 2007)						x	x	x	x		x					x	x	
(G. J. Baxter et al., 2011)					x	x	x	x		x				x	x	x		
(S. L. Alam et al., 2011)				x		x	x	x		x		x		x		x	x	
(Liu et al., 2012)	x					x		x		x		x		x			x	
(Oehri & Teufel, 2012)					x	x				x						x	x	x
(bin Husin & Swatman, 2010)				x		x	x	x	x	x			x			x		
(Polaschek et al., 2012)					x	x	x	x	x	x			x			x	x	
(Zheng et al., 2010)	x					x	x	x		x								
(Bonsón et al., 2012)					x	x	x	x			x	x		x		x	x	x
(Osimo, 2008)					x	x	x	x	x		x	x		x		x	x	
(Bertot et al., 2011)			x			x	x	x			x			x				
(Linders, 2012)			x			x		x			x	x		x		x		

Table 18 Concept Matrix Table 2

Authors	Operations							Web 2.0 Management											
	Search	Links	Authoring	Tags	Extensions	Signals	Ratings	Risks	Education	Social	Services	Security	Awareness	Strategy	Accessibility	Participation	KM	Transparency	Trust
(McAfee, 2006)	x	x	x	x	x	x				x									
(Kim et al., 2009)	x	x		x					x	x	x					x			
(Singh et al., 2010)		x	x						x			x		x			x	x	
(Lubna Alam & Walker, 2011)	x	x	x			x		x		x	x	x		x		x			
(Leahy & Broin, 2009)		x	x				x		x	x			x		x	x			x
(Charalabidis & Loukis, 2011)		x	x				x									x			
(Yang, 2012)								x			x	x		x		x		x	x
(Charalabidis et al., 2010)		x	x			x	x		x							x	x		
(Wattal et al., 2010)	x	x	x					x						x	x	x			
(Nam, 2010)			x			x	x			x	x					x			
(Hardy & Williams, 2010)								x				x	x	x					x
(McGrath et al., 2011)								x		x						x			
(Kühne et al., 2011)	x	x		x		x										x			
(Fink, 2010)	x	x	x			x		x			x	x	x	x		x			
(Seo & Rietsema, 2010)	x	x	x	x	x	x	x			x	x					x	x		x
(Patten & Keane, 2010)			x	x		x		x	x			x				x	x		x
(Nath et al., 2011)	x			x		x			x							x	x		
(S. L. Alam et al., 2012)	x	x	x	x			x				x					x			
(Jain, 2010)			x				x			x	x			x		x		x	x
(Vaast et al., 2013)	x	x	x	x						x	x			x					
(Raisinghani, 2012)								x				x							
(Senadheera et al., 2011)	x	x	x					x		x	x	x		x					x
(Pee, 2012)								x		x									x
(Stieglitz et al., 2012)		x	x	x			x									x			
(Larsson & Moe, 2011)	x	x	x	x						x	x								
(Tsui et al., 2010)	x	x	x	x	x	x		x				x				x		x	
(Kongthon et al., 2012)	x		x	x							x		x			x			
(Peedu & Lamas, 2011)	x	x	x	x		x	x				x					x		x	x
(L. Alam & Lucas, 2011)			x									x				x		x	x

Table 19 Concept Matrix Table 2 continuation

Authors	Operations							Management											
	Search	Links	Authoring	Tags	Extensions	Signals	Ratings	Risks	Education	Social	Services	Security	Awareness	Strategy	Accessibility	Participation	KM	Transparency	Trust
(de Kool & van Wamelen, 2008)	x		x	x			x	x	x		x					x			
(Freeman & Loo, 2009)	x	x	x	x		x	x					x				x			
(Murugesan, 2007)	x	x	x	x		x	x	x				x							x
(G. J. Baxter et al., 2011)			x						x		x			x		x			
(S. L. Alam et al., 2011)	x		x	x		x		x				x				x			
(Liu et al., 2012)			x					x			x		x			x	x	x	
(Oehri & Teufel, 2012)		x						x				x	x	x					
(bin Husin & Swatman, 2010)	x	x	x	x	x	x			x			x							
(Polaschek et al., 2012)	x	x	x	x		x	x					x							
(Zheng et al., 2010)		x	x	x												x	x		x
(Bonsón et al., 2012)		x	x	x		x		x								x	x	x	x
(Osimo, 2008)	x		x	x		x	x	x	x		x	x	x			x	x	x	x
(Bertot et al., 2011)		x	x				x	x	x	x		x			x	x		x	x
(Linders, 2012)	x		x				x	x		x			x			x			x

## 9.2 Comparison of the characteristic traits of web 1.0 to web 2.0

Table 1. Comparison of the Characteristic Traits of Web 1.0 to Web 2.0			
Dimension	Web 1.0	Web 2.0 (examples)	Source
Technology	Standalone software packages (users update their software using patches that vendors provide)	The Web as software platform: the Internet is the software (i.e., offer software via a Web browser; e.g., Google Docs, G.ho.st, a Web OS)	[Murugesan 2007; O'Reilly 2005b]
	Closed source environment	Interconnectivity, crowd-sourcing, emergent open source environment, and network externality (e.g., Joomla, eyeOS)	[Anderson 2007; Murugesan 2007; Musser et al. 2006]
	Compartmentalized applications	Modular, semantic tagging, collective intelligent component based applications, community-based architectures (e.g., Web services, Web API)	[Anderson 2007; O'Reilly 2005b]
	Centralized client-server (Web server to clients) technology and limited reach to Web sites	Wide reach to smaller sites enabling the long tail effect, may employ peer-to-peer networking (e.g. Bit Torrent, eDonkey)	[Anderson 2007; Musser et al. 2006; O'Reilly 2005b]
	Low interactivity with relatively static Web pages	High interactivity with AJAX with dynamic Web pages (e.g., Google Maps)	[Murugesan 2007; O'Reilly 2005b]
	Directories/Taxonomy/general search	Machine readable semantic data: Tagging/ Folksonomy/ Microformats/ vertical search	[Anderson 2007; O'Reilly 2005b; Tenenbaum 2006]
Business/ Application	Ad-revenue based model is one of many Web business models.	Relevance, ubiquity and the indirect benefits of network externality ensures Ad-revenue based model to become increasingly important. (e.g., Google AdSense, AdWords)	[Murugesan 2007; O'Reilly 2005b]
	Publishing using top down approach (e.g., Britannica Online),	Participation from bottom up approach (e.g., Wikipedia, blogging, MySpace, YouTube, Flickr),	[Anderson 2007; Murugesan 2007; O'Reilly 2005b; Tenenbaum 2006]
	Advertiser initiated advertisements (i.e., one-way, read-only; e.g., DoubleClick)	User oriented and enhanced advertisements (i.e., two-way & dynamic); relevant, easy to share, access, and consume: user experience, information, and knowledge [e.g., Google AdSense)	[Murugesan 2007; O'Reilly 2005b]
	Monolithic core competency (e.g., MapQuest)	Data Mashups pull together different sources of data to create a new hybrid application or service that provides more customer value (e.g., WikiCrime)	[Anderson 2007; Murugesan 2007]
Social/User	Small crowd interactions and networks	Massively connected social interactions, social networks, social computing, community empowerment (e.g., MySpace, Facebook)	[Anderson 2007; Musser et al. 2006; O'Reilly 2005b; Tenenbaum 2006]
	Limited collaboration	Collaboration; easy to participate, create, and update content (e.g., Wikipedia, blogging, MySpace)	[Anderson 2007; Murugesan 2007; O'Reilly 2005b]

<sup>4</sup>For some Web applications, the boundaries between Web 1.0 and Web 2.0 are not as clear as stated in the table.

Figure 8 Comparison of the characteristic traits of Web 1.0 to Web 2.0 (Kim et al., 2009)





- Documents, websites, Facebook pages, etc.
- Type of organizations:
  - Government organizations
    - Police
    - Health
    - University/Education
    - Government Road Administration
    - Tax office

## Questions:

### 1. Opening Statement and questions

- Brief description of ethical factors and confidentiality
    - Participant name will not be used: anonymity
      - This also goes for the organization if required
    - Reference to the participant role could be mentioned
  - Digital recordings and transcription will be kept safely and will not be distributed to others without the consent of the informant.
  - Citations and other information about the organization will only be used with the consent of the informant.
  - If required, the informant or person in charge will get the opportunity to read through the report before the thesis is delivered.
  - The results of this research will be used for further research and publications
  - The informant has the right to withdraw anytime during the interview and also the right to not answer certain question questions if he or she finds it uncomfortable or to be classified as sensitive information.
  - The duration of this interview should be about an hour (60 minutes)
- a. Are there any questions or related concerns you have with the ethical factors and confidentiality issues I just explain? Or maybe other issues with sensitive information?
  - b. If there are other confidentiality issues you remember at the end of the interview, please feel free to bring them up?

### 2. Factual information

Facts about the organization and informant

#### Informant

- What is your name and nationality?
- Can you tell me a bit about your educational background? (Where, what, etc.)
- What is your present position? How long have you been in this position?
- How many years of work experience have you had in this organization?
- Could you tell me a bit about your job description? What do you do?

#### Organization

- I will like to know a bit about this organization, can you tell me when it was founded?
- How many employees are working here?
- Is it just in this region? Are there other branches in the country?

- Could you tell me a bit about the purpose of this organization?

### 3. *Main section:* Questions related to the research question

Sub questions directly related to the research question.

#### **Web 2.0 or Social Media**

*Government Organizations using Web 2.0 or Social Media*

Concepts: Drivers, principles & operations

- Are there any forms of social media being used by this organization? Why/why not?
- What was the reason for implementation? How did it come about?
- How was the implementation carried out? Gradually, project management, trial and error, etc.
  - Were there requirements that needed to be in place, before the implementation took place?
- Could you tell me about the applications being used? Are there other applications being used?
- What are these applications being used for? For example: to search, vote, comment, etc.
- Has there been a successful result so far? Was there any strategies used to ensure these results?
- Are these services being used internally, externally or relational? Within the organization or with citizens, businesses, etc.
  - Internal: was there any resistance to change? Training conducted, etc.
  - External: are these services being used? unwanted results for participants: ex. Hostility amongst participants
  - Relational: cross-agency collaboration problems
- Could you tell me a bit about the various participants? Their individual purposes for using these services. Collaboration, participation, etc.

*Management:*

- Are there any forms of management or maintenance in place? How, what, who, when?
- Are there policies in place, in regard to laws or any other form of governance? For example: privacy, copyright, etc.
- What about the management of security risk? Ex: hacks, virus, etc.
  - Security awareness to participants : mainly internal
- Has there been any concerns of ethical issues, trust related matters among participants, social inclusion, and so on.

#### **Demand-pull**

*Government Organizations not using Web 2.0 or other areas that could benefit from the use of Web 2.0*

Concept: finding Web 2.0 Drivers, principles

- Has there been any mention of Web 2.0 implementation or use in this organization, maybe in the near future? Plans to implement,
  - If implementation is going to occur, who is going to be in charge of it?
  - Do you know some of the requirements that need to be place for such an implementation to take place?
- Do know how it is going to be implemented? Where (in which departments) and how it is going to be used?

- Could you tell me a bit about the present situation in this organization... (restricted to the informant department or entire organization)
  - Are there other services being provided (Non Web 2.0 services)? Ex: project group – are there services/software being used to facilitate collaboration.
    - Could you elaborate the purpose of these services?
    - Are they internal, external or relational? Are they similar or are there differences between these transformation areas? What are they?
  - What are the means of communications used by this organization? Could related to the services or not
  - Who usually participate in these communications?
    - Are there different interest concerning the various types of participants? Differences between the supply and demand participants. Ex. Giving or receiving info.
  - Could you tell me about the various types of activities carry out by this organization? Ex: participation, cross agency or departmental collaboration, etc.

### **Operations**

Concept: identifying Web 2.0 Operations

- Could you discuss a bit more what one can do with these services or during these organizational activities? For example: the possibility to comment or coproduce, the activities connected to collaboration, etc.

### **Management**

Concept: management

- How are these services being managed?
- Are the security measures in place? What kind?
- What about policies? Laws, privacy issues, etc.
- Are there any other management issues related to:
  - Trust: internal/external
  - Transparency: how much information the public is to receive
  - Accessibility
  - Strategy use to successfully run these services and activities
  - Ethical problems
  - Awareness: of services, security risk, etc.

#### *4. Closing questions:*

- Is there anything else you might like to add? Something I forgot to ask?
- Thanks for participating
- Is it possible for me to send you follow up question about something I forgot to ask or concerning new findings in my research
- I was also wondering if I could get access to internal information for example: documents that may be relevant to my research, intranet, website, etc.
- After transcribing, I will like for you to go through the transcription of the interview to make clarification to any misunderstanding I have perceived.

Thanks once again!

## 9.5 Norwegian Interview Guide

# IS-501 Masteroppgave Intervjuguide

### Målet med prosjektet:

Hoved målet med dette prosjektet er å forstå hvordan offentlige organisasjoner bruke eller kan bruke Web 2.0 eller sosiale media. Resultater fra dette prosjektet skal hjelpe offentlige organisasjoner med en bedre forståelse på hvor de skal begynne, hva de skal fokusere på og til slutt med hvordan de skal administrere de tjenestene som tilbys.

### Forskningsspørsmål:

Hvordan kan offentlige organisasjoner bruker Web.20?

### Offentlig organisasjoner jeg hadde tenkt å undersøke:

Politi

Helse sektoren

Universitet/

Vegvesen

Kommune

	Spørsmål	Diskusjonselementer
<b>Åpning spørsmål</b>	Konfidensialitet  Har du ett spørsmål angående dette eller andre sensitive informasjoner?  Hvis du har noen spørsmål til slutt om dette, bare si ifra?	<ul style="list-style-type: none"><li>- anonymitet: navnet ditt og organisasjonen</li><li>- skal navne noen om din rolle</li><li>- Digitale lydopptak &amp; transkripsjoner skal bevares utilgjengelig for andre</li><li>- Hvis ønskelig kan jeg send deg reporten før innleveringen</li><li>- Du har rett til å ikke svare på sensitive spørsmål</li><li>- Varigheten til intervjuet er ca. 1 time</li><li>-</li></ul>
<b>Fakta spørsmål</b>	Kan du fortelle meg litt om deg selv?	<ul style="list-style-type: none"><li>- Navnet ditt og nasjonalitet?</li><li>- Om utdanningen din – hva, hvor</li><li>- Din stilling her</li><li>- Hvor lange har du vært i denne stillingen</li><li>- Arbeidserfaring i organisasjonen</li><li>- Arbeidsoppgave</li></ul>
	Kan du fortelle meg litt om organisasjonen?	<ul style="list-style-type: none"><li>- Når ble organisasjonen stiftet</li><li>- Hvor mange ansatte</li><li>- Ligger det andre steder i Norge</li><li>- Hva er hensikten med denne organisasjonen/ hva jobbe dere med</li><li>-</li></ul>
<b>Hoveddelen</b>	Bruke dere sosiale media?	<ul style="list-style-type: none"><li>- Kan du si litt om hvorfor/hvorfor ikke</li><li>- Ble det gjennomført stegvis eller</li></ul>

Drivers, principles & operations		<ul style="list-style-type: none"> <li>- Hadde dere noe kravspesifikasjoner på plass før implementeringen</li> <li>- Kan du si litt om applikasjoner dere bruke</li> <li>- Hva bruke dere applikasjoner til ex. Å søke, kommentering, angi stemme</li> <li>- Har dere fått noe bra resultater så langt</li> <li>- Brukte dere noen strategier for å oppnå disse resultatene</li> <li>- Bruke dere disse tjenestene intern eller ekstern: borgere, bedrifter,</li> <li>- Intern: har dere hatt noen motstander ved å innføre disse endringer: trening</li> <li>- Eksterne: bruke folk disse tjenestene - deltagelse - krancling</li> <li>- Cross agency – samarbeider mellom eller med andre offentlig organisasjoner</li> <li>- Kan du si litt om de forskjellige deltagere – bruke de disse tjenestene for å samarbeide – på grunn av deltagelse</li> </ul>
	Management – styring	<ul style="list-style-type: none"> <li>- Styring/ledelse: hvordan, hva, hvem, når</li> <li>- Har dere noen regler på plass: governance – personvern, opphavsrett</li> <li>- Hva med sikkerhet risiko: hacking, virus, osv.</li> <li>- Gi dere noe sikkerhet bevissthet til deltagere angående sikkerhet</li> <li>- Har dere fått noen etiske problemer, stole folk på tjenesten,</li> </ul>
<b>Nonsocial media</b>	Demand-pull operations	
	management	
<b>Avslutnings spørsmål</b>		<ul style="list-style-type: none"> <li>- Er det noen du vil legge til eller noen jeg glemte å stille spørsmål</li> <li>- Takk for å ha deltatt i mitt prosjekt</li> <li>- Jeg lure på om jeg kunne sende deg noen spørsmål litt senere om jeg glemte noe</li> <li>- Lurer på om jeg kunne få tilgang til andre resurser – internet side, dokumenter,</li> <li>- Lurte på om du kunne også sjekke transkripsjoner for å klare opp misforståelse</li> </ul> <p>Tusen takk igjen for å ha deltatt i mitt prosjekt</p>

### **Demand-pull**

*Government Organizations not using Web 2.0 or other areas that could benefit from the use of Web 2.0*

Concept: finding Web 2.0 Drivers, principles

- Has there been any mention of Web 2.0 implementation or use in this organization, maybe in the near future? Plans to implement,

- If implementation is going to occur, who is going to be in charge of it?
- Do you know some of the requirements that need to be place for such an implementation to take place?
- Do know how it is going to be implemented? Where (in which departments) and how it is going to be used?
- Could you tell me a bit about the present situation in this organization... (restricted to the informant department or entire organization)
  - Are there other services being provided (Non Web 2.0 services)? Ex: project group – are there services/software being used to facilitate collaboration.
    - Could you elaborate the purpose of these services?
    - Are they internal, external or relational? Are they similar or are there differences between these transformation areas? What are they?
  - What are the means of communications used by this organization? Could related to the services or not
  - Who usually participate in these communications?
    - Are there different interest concerning the various types of participants? Differences between the supply and demand participants. Ex. Giving or receiving info.
  - Could you tell me about the various types of activities carry out by this organization? Ex: participation, cross agency or departmental collaboration, etc.

## **Operations**

Concept: identifying Web 2.0 Operations

- Could you discuss a bit more what one can do with these services or during these organizational activities? For example: the possibility to comment or coproduce, the activities connected to collaboration, etc.

## **Management**

Concept: management

- How are these services being managed?
- Are the security measures in place? What kind?
- What about policies? Laws, privacy issues, etc.
- Are there any other management issues related to:
  - Trust: internal/external
  - Transparency: how much information the public is to receive
  - Accessibility
  - Strategy use to successfully run these services and activities
  - Ethical problems
  - Awareness: of services, security risk, etc.

## 9.6 Letter to the participants

Hei,

Jeg er en Masterstudent ved Universitetet i Agder (Kristiansand) og er nå inne i mitt siste semester og holder på å skrive masteroppgave. Med tanke på datainnsamlingen søker jeg etter personer som kunne vært behjelpelige med å delta i oppgaven min og å stille til intervju.

Oppgaven min handler om bruk av Web 2.0 eller Sosiale Media i den offentlige sektor. Målet med dette prosjektet er å forstå hvordan de offentlige organisasjoner bruke eller kan bruke sosiale media. Resultatet fra dette prosjektet skal hjelpe de forskjellige organisasjoner med;

- Hvordan de skal begynner
- Hva de skal fokusere på
- Og til slutt med hvordan de kan administrere de tjenestene de leverer.

Aktuelle organisasjoner for meg er både de som har tatt i bruk sosiale media og de som har ikke begynt på det enda. I denne anledning trenger jeg ca. 15 forskjellige intervjuobjekter som jobber med sosiale media, prosjekter, kommunikasjon, informasjon, osv. i den offentlige sektor. Dere må gjerne selv foreslå personene jeg kan snakke med.

Jeg lurer dermed på om noen i din organisasjon kan være behjelpelig med å stille opp på to intervjuer? Dette vil ikke ta mer enn ca. 1 time hvor jeg kommer på besøk for å snakke med dere. Jeg ønsker å få gjort intervjuene før påske, i ukene 11 – 12. Det er opp til dere når det passer innenfor dette tidsrommet og intervjuene vil være anonyme.

På forhånd takk.

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