MEASURING AND COMPARING PRESENCE ON FACEBOOK

A PROFOUND UNDERSTANDING OF YOUR FACEBOOK COMMUNITY

M.Sc. Business Administration and Information System

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Abstract

In recent years, social media has become ubiquitous and organizations are using social media as a new communication channel. Despite all the positivism and fast adoption rates, organizations are struggling with analyzing and measuring social media.

This Master's thesis focuses on how organizations can measure and compare their social presence on Facebook. Furthermore, the thesis analyses posted content to examine if the Facebook community prefers one type over another.

In the progress, a social media metrics framework is developed based on the academic literature on social media and concrete problematics that organizations are facing.

The framework measures individual parameters for valuable insights and comparative parameters for assessment of the organizations' social standing. The framework is applied on SKAT- the Danish tax authority.

The individual parameters examine SKATs Facebook community for valuable innovative information and the comparative parameters analyze SKATs social standing compared to four Danish municipalities and the Australian Taxation Office.

By applying advanced social analytics techniques and content analysis on social data extracted from Facebook, a profound understand of SKATs Facebook activities and social community is created.

The insights of this thesis equip SKAT with valuable information that can be used as reasoning in developing social media key performance indicators so they are able to better navigate the social media jumble.

Introduction

Social media has become an integrated part of our everyday life. People share their daily experience and thoughts with the world through social media applications such as Facebook, Twitter, Instagram etc. Because of its ease of use, speed and reach, social media is fast changing the behavior of people and the traditional way people communicate.

The trend has not only changed the way we communicate with or friends and families, but has become a new communication channel for interacting with organizations. Companies have been quick to jump on the social media bandwagon trying to invest in social media in order to engage their users. The development has led to a need for organizations to maintain and manage their social media efforts to provide effective and sufficient support to their consumers' needs. Industry gurus claim that if you do not participate in social media you are not part of cyberspace anymore (Kaplan, Haenlein 2010).

Even government organizations around the world are experimenting with social media to relate with their constituencies and try to reinvent the government-citizen relationship (Picazo-Vela, Gutierrez-Martinez et al. 2011). The key elements of good governance these days is transparency and accountability, and social media is one way to promote new forms of accountability and to increase citizens trust in governments (Bonson, Torres et al. 2012). Nevertheless, social media has the potential to extend government services and solicit new ideas and improve decision-making and problem-solving.

The situation

Although social media has changed our way of interacting and every organization is aware of the importance of embracing social media, it can be hard to measure the actual effect or return on investment of social media efforts(Weinberg, Pehlivan 2011). Not only in terms of financial figures, but how can you know if your organization is doing well on social media? And good related to what?

A poll made by the Organization for Economic Co-operation and Development (OECD) concludes that 64% of governments do not monitor the social media impact, and only 20% are using metrics to

monitor the effect of social media(OECD 2011). Most of the governmental organizations do not take an active role in their own social media environment and need to monitor and measure their social media impact much closer(Mickoleit 2014).

Motivation

In the initiation phase of the thesis, I met with the person responsible for managing social media at SKAT with the intention of learning more about the challenges they face with the aim to confine the topic of this thesis. The meeting revealed that they were interesting in finding out how their posted content on Facebook performed. SKAT makes different types of posts on their Facebook wall both in terms of the substance and in terms of how it is posted. Some on the posts have picture or video attached, and some are just plain text. The substance of some of the posts is highly tax related while other posts are not so tax-technical. SKAT has also tried to use some humor in some of their posts.

SKAT is curious to find out if their social media community prefers some type of post to others, so they can make data-driven decisions about their Facebook posting.

In the meeting it was also discussed how SKAT measured their social media performance. In 2011, SKAT's executive board announced that they have decided to introduce target-management as a management style for the whole organization. The essence of this management style is that each director and department director is evaluated base on key performance indicators (KPI). The KPIs are a performance measurement for different areas of the organization, and each KPI has its own operational goal. SKAT has not developed any KPIs for their engagement in social media because it is hard to assess a sufficient KPI for their social media efforts. Therefore, it is interesting and of high relevance to a future KPI social media management style, to investigate how SKAT is performing compared to other organizations. By knowing where they stand compared to other organizations, they can more easily develop well documented and data driven KPIs for future measurements.

Research question

In regards to the problematics described above, this thesis will examine content posted on a Facebook wall in order to see if the organizations' clients have any preferences or react differently depending on the posted content. The thesis will also examine how an organization's presence on

Facebook can be measured and compared with other organizations, so the organization can better position itself. Therefore, the research question states:

1. **How can administrative organizations measure and compare their social media presence on Facebook?**
2. **Do Facebook posts perform differently depending on the substance and presentation of the post? And does humor have any effect on the performance?**

Structure

The structure of the thesis is visualized in Figure 1 below.

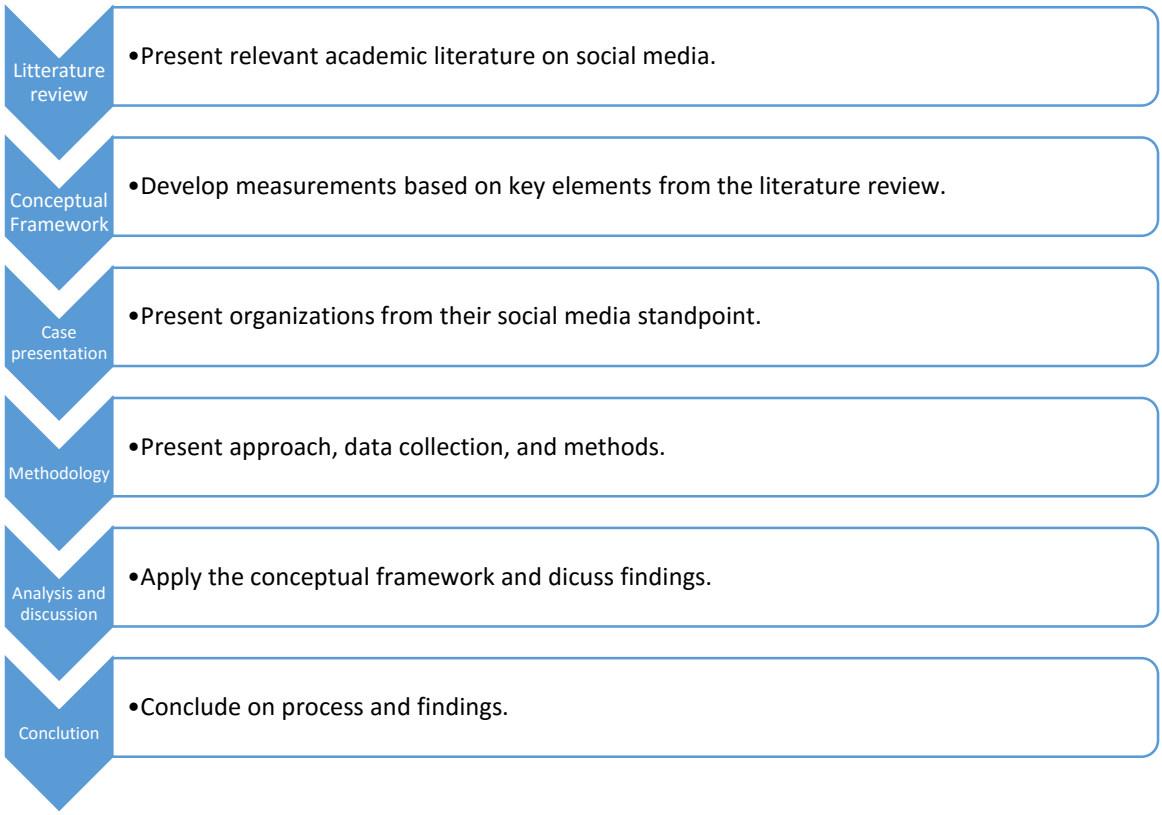


Figure 1 Structure for the thesis

Literature on Social media

The literature on social media has much focus on the importance and opportunities of social media. Most of the focus lies on the online users' attitudes and behaviors and the strategical choices an organization faces. Relatively little research presents tangible approaches on what and how to measure the effect of social media.

In order to get an overview of social media, both from the perspective of the consumer and the organization, a literature review is conducted. The aim of the literature review is to clarify relevant concepts in social media and to identify success criteria in social media.

The literature will be presented from a business perspective and will expose why almost all modern companies and organizations choose to use social media. The technological shift from Web 1.0 to Web 2.0 will demonstrate the change from a one-way-communication channel to two-way-communication and present the consequences and opportunities that this shift has caused.

With the intention of getting a holistic view of social media the relevant concepts and mechanisms will be discussed to demonstrate the benefits and opportunities that social media has to offer. These concepts and mechanisms will model appropriate categories and elements that an organization needs to measure. The theories and models have been chosen from a perspectival level of applicability relevant to the objective of the thesis.

Social Media

It is indisputable that social media has changed the way we relate to other individuals and organizations. The technological development over the past years has catapulted company and consumer contact from the traditional Web 1.0 model to the highly interactive Web 2.0 world, where consumers have become more powerful and are dictating the nature of the interaction (Hanna, Rohm et al. 2011).

Web 2.0 was originally coined by Tim O'Reilly and it embraces information sharing and collaboration across organizational boundaries(Tim O'Reilly 2005). Web 2.0 is considered to be the platform for the evolution of social media. Kaplan and Haenlein (2010) have defined Social Media as:

"*A group of internet-based applications that build on the ideological and technological foundations of web 2.0 and that allow the creation and exchange of User Generated Content*."

User generated content can be seen as the sum of all ways in which people make use of social media. The term is applied to describe all the various forms of media content that are publically available and created by the end-users (Kaplan, Haenlein 2010).

According to Kaplan and Haenlein (2010) web 2.0 is a platform where content is continuously altered by all operators in a sharing and collaborative way. The web based technology helps to create highly interactive platforms where people and communities share, co-create, discuss and modify user generated content.

Mangold and Faulds (2009) claim that social media, or *consumer-generated-media* as they call it, has changed the tools and strategies for communicating with customers. They say that this form of media describes a variety of new sources of online information that are created, initiated, circulated and used by consumers with the intent of educating each other about products, brands, services, personalities and issues.

Thus social media has equipped the organizations to establish a direct relationship with the consumers. Both the organizations and consumers are free to generate content on the web pages, which further leads to conversations and discussions. One of the benefits is that organizations have

the opportunity to share their information with a large base of consumers, but the consumers are also free to publish any content whether positive or negative regarding the information.

Types of social media

Kaplan and Haenlein (2010) have classified social media into six different categories: collaborative projects (e.g., Wikipedia), blogs and micro blogs (e.g., Twitter), content communities (e.g., YouTube), social networking sites (e.g., Facebook), virtual game worlds (e.g., World of Warcraft), and virtual social worlds (e.g., Second Life).

Kietzmann, Hermkens et al. (2011) have further defined social media in terms of the functionality that social media encompasses. They claim that many executives avoid or ignore many forms of social media because they do not understand what it is, the various forms it can take and how to grow with it and learn from it. Kietzmann, Hermkens et al. (2011) have created a framework that defines the functionalities of social media by using seven functional building blocks:

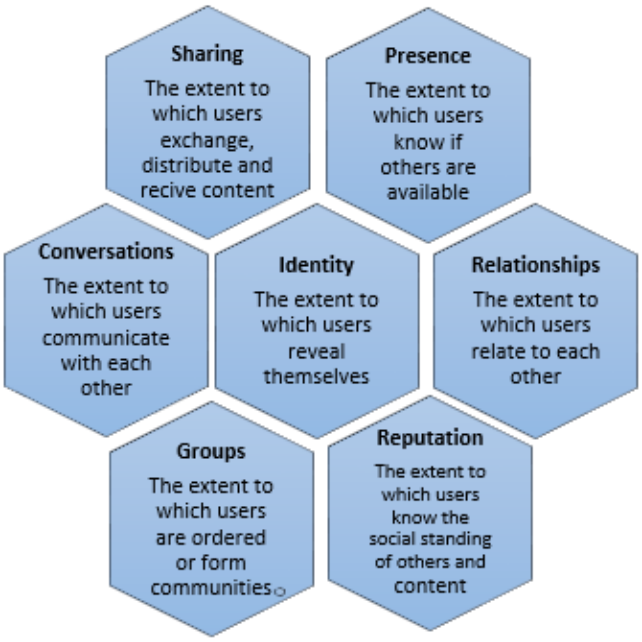


Figure 2 The social media honeycomb - social media functionality

The framework is a good illustration of all the components in social media and can be used as a lens for understanding social media through the seven functional building blocks. Kietzmann, Hermkens et al. (2011) propose that executives should familiarize themselves with the honeycomb in order to understand how they can use social media and it will also help guide the social media strategical decisions.

The building blocks are not mutually exclusive, nor are they part of every social media site. The building blocks represent the following(Kietzmann, Hermkens et al. 2011):

- **Identity**

  The identity block covers the extent to which organizations or individuals make their identity public. This can include disclosing information such as name, age, gender or professions. It also includes information that portrays users in certain ways. People tend to reveal other information about themselves through self-disclosure of subjective information such as thoughts, feeling, likes and dislikes.
- **Conversation**

  The conversation block represents the extent to which users communicate with other users in a social setting. Most of the social media sites facilitate conversation among people and interest groups.
- **Sharing**

  The sharing block emphasis the extent to which users exchange, distribute and receive content. Sharing alone is a way of interacting in social media, but whether sharing leads users to want to converse or even build relationships with each other depends on the functional objective of the social media platform.
- **Presence**

  The presence building block represents the extent to which users can know if other users are accessible. It means that users know where others are in the virtual world and/or in the real world and whether they are available.
- **Relationships**

The relationship block is about the extent to which people can be related to other people in a social setting. Relating means that there is an association formed between people which may lead to conversations and shares.

- **Reputation**

  The reputation block represents whether users can identify the standing of others, including themselves, in a social media setting. Meaning that people can identify other peoples position in society through social media. Reputation is something that is earned through shared content, expressed thoughts, likes and dislikes. The same applies for organizations seeking to improve their social media reputation.

- **Groups**

  The group functional block represents the extent to which users can form communities and sub-communities. The more 'social' a network becomes, the bigger the group of friends, followers and contacts.

The construction of each individual social media site varies depending on the purpose of the site. However, sites inherently focus only on three to four of the functional blocks(Kietzmann, Hermkens et al. 2011).

Traditional media vs social media

Weinberg and Pehlivan (2011) have highlighted the difference in key process elements in traditional communication channels and social media channels. The key processes are: *media*, which specifies what kind of channel is used to deliver the message, *spend*, in which form the investment is perceived and measured, *delivery*, who delivers the message, *Objectives*, what is the purpose of the message. All the elements and process are shown in Table 1.

The *media* and *objectives* processes will not be further discussed as the previous examined literature has covered these elements, but Weinberg and Pehlivan (2011) highlight interesting points in the *spending* and *delivery* process. They point out that traditional media, regarding *spend*, has always focused on ROI in terms of cash and has often been viewed as a cost/expense function. These functions can also hold true with respect to social media, but social media has other functions that must be taken into account.

Weinberg and Pehlivan (2011) have observed a relationship-based currency and a social currency that must be valued as respectively high as the cost/expense functions. These spendings should be characterized as investments in building and maintaining relationships. These relationships have a different value compared to the traditional media. In traditional media a message is delivered directly from the marketer in their own unedited voice by, for example, posting a video of an advertisement on a social media platform. In social media a message delivered by a source other than the marketer is not necessarily – and, often is not – perceived as direct from the marketer; rather as from a non-marketer source (e.g., customer/fan/follower). Messages delivered by a non-marketer is more authentic and has more value to the social community. Therefore, Weinberg and Pehlivan (2011) recommend that social media should not be treated as just another channel which should prove its worth in a traditional ROI, but should be considered as an investment that builds social currency that contributes with nonfinancial values as trustworthiness, authenticity and transparency. This is the key distinction between traditional media spending decisions and social media spending decisions. Therefore, social media marketers must recognize the distinctions in the media mix and act in

accordance with marketing objectives and not forget the social values when allocating resources to media efforts and campaigns (Weinberg, Pehlivan 2011).

	Traditional media	**Social media**
Media	Television, radio, print, billboard, etc.	Social networks, blogs, microblogs, communities, etc.
Spend	Cash, cost	Social currency, trustworthiness, authenticity, transparency, investment
Delivery	Direct from marketer, unedited	From source, delivered by volition of, and in words selected by, source
Objectives	Awareness, knowledge, recall, purchase, etc.	Conversation, sharing, collaboration, engagement, evangelism, etc.

Table 1 Traditional vs Social media process elements.

Mangold and Faulds (2009) call social media the new hybrid element of the promotion mix and underline that the traditional integrated marketing communication paradigm is changing. In the traditional paradigm the marketer had control over the content, but in social media the content, timing and the frequency is beyond the marketers control. Therefore, managers who are accustomed to exerting a high level of control over company-to-consumer messages must learn to talk with their customers, as opposed to talking at them, consequently influencing the discussions taking place in the social media space.

Vatrapu (2013) has categorized three types of spaces for customer-organization interaction; *my place*, *your place*, and *our place*. My place refers to the organization's place which could be some kind of forum that the organization owns and controls. Your and our place reflect more the modern tendency of customer-organization interaction where the organization has less control and does not necessary own the place. Your place is for example when a customer interacts with an organization using his/her own personal Facebook site. Our place could be an organization's Facebook page where there is a sense of community and co-ownership among the organization and their customers/fans.

Facebook

Facebook is a social networking website which was founded in 2004 by Harvard student Mark Zuckerberg and some of his contemporaries. The service was initially only availably to Harvard students but was soon expanded to regional universities and further universities before opening up to high school students and global users aged 13 or over(Statista 2016).

Today, Facebook has over 1.65 billion monthly active users, which are users that have logged in to Facebook during the last 30 days, and is the largest social network in the world (Statista 2016). Facebook has become so dominating in today's society that the term Facebook addict has been included in the Urban Dictionary(Kaplan, Haenlein 2010).

Some other popular social network communities are Myspace, Twitter, LinkedIn, YouTube, Pinterest, Google Plus, Tumblr, and Instagram. All these other social networks are not direct competitors to each other as each platform offers a different product for specific agendas.

Kaplan and Haenlein (2010) have specified the social media honeycomb for Facebook. The function blocks for Facebook are shown in Figure 3. The thicker the border of each building block, the greater this social media functionality is on the site.

As the figure shows the main functionality in Facebook is *Relationship,* meaning that associations are formed among people leading to conversations and that is why *Conversations* also is marked as a functionality. Since Facebook users have a personal profile with pictures, personal information and most of the time also reveal civil status and where they work, *Identity* is also marked as a functionality. People can also see when friends last were online and whether or not they have seen the message you have sent to them; therefore, *Presence* is also listed as a functionality.

Especially social networking sites like Facebook have become an important role in building strong brands. Various statistics have demonstrated the ubiquitousness and effectiveness of social networking usage for individuals and organizations (Shen, Bissell 2013). People spend more and more time on social media networks so that the number one online activity is no longer pornography but social networking (Qualman 2011). Facebook is ranked as the most popular social networking site and

has the ability to attract a large amount of online users and to keep their attention for multiple hours. The increasing number of potential clients on Facebook and their dedication to online surfing have equipped this social networking site with great business value and branding value(Shen, Bissell 2013).

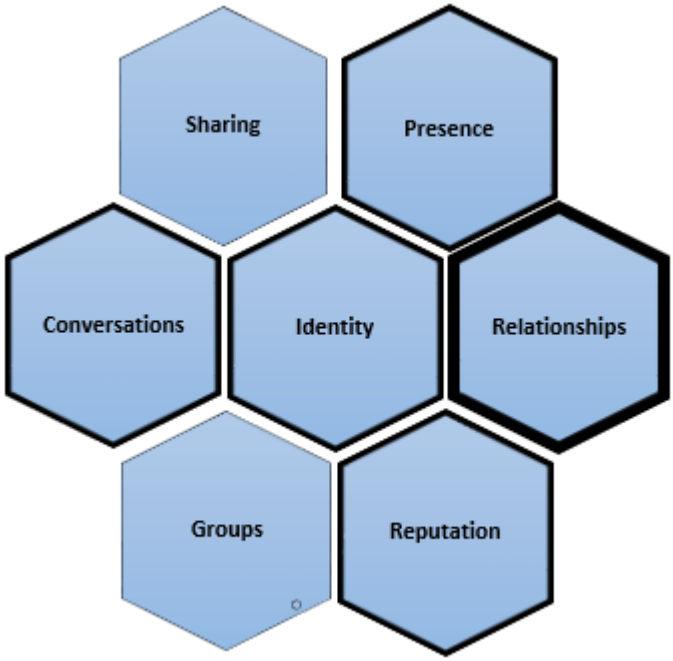


Figure 3 The social media honeycomb for Facebook

Social Business

Academic literature claims that the internet has resulted in a vertical integration of organizational channel capacities such as production, distribution, transaction, and communication; and a horizontal integration of organizational communications such as advertising, public relations, and promotions (Vatrapu 2013). Both the private and public sector is adapting to the technological evolution in order to harvest the benefits and value that lies within social media.

Recent business reports claim that the spending on social media advertising has increased worldwide from $11.36 billion in 2013 to an astonishing $17.74 in 2014(Kumar, Bezawada et al. 2016). These huge and fast growing figures reflect the enormous interest in the value of social media. Researchers claim that the increasing adoption and use of social media channels in organizational settings is resulting in a new kind of organizational paradigm called *"Social Business" which is defined as:*

"A social business is an organization that strategically engages, analyses, and manages social media to structure organizational processes and support organizational functions in order to realize operational efficiencies, generate comparative advantages, and create value for customers, shareholders, and other societal stakeholders(Vatrapu 2013). "

Vatrapu (2013) explains, that the new paradigm is situated in the socio-technical confluence of the interrelated transformational developments in technology, organization, and society. Therefore, organizations are adapting to the technological evolution and creating new organizational roles with the intent to adapt to the societal changes and market demands.

Although there is a lot of optimism surrounding the value of social media, reports suggest that more than 80% of marketers are having problems measuring the returns of all this money they are investing in social media (Kumar, Bezawada et al. 2016). Therefore, Vatrapu (2013) emphasis that a new generation of business scorecards need to be developed that encompass this new era of doing business.

Vatrapu (2013) points out that organizations that choose to go into social business must also take into account the three critical aspects of social business: social business engagement, social media analytics, and social media management.

- ***Social Media Engagement(smE)***: concerns the strategical choices an organization faces when social media is chosen as one of the communication channels to interact with its internal and external stakeholders. The organization must apply a strategy for their social media activities that is aligned with the corporate strategy. The organization should develop social media guidelines for their presence online and be aware of all the key concepts in online marketing as *the hierarchy of effects*, *decision heuristics, integrated marketing communication, and segmentation(Vatrapu 2013).*

- ***Social Media Analytics (smA)****:* covers all the collection, storage, analysis and reporting of all the social data that the organization can collect from its social media environment(Vatrapu 2013). Social media has primarily been used by organizations to get insights about what users think about their products or services and about the users themselves. Therefore, most of the organizations have been in a listening mode, i.e., a large amount of data from multiple social media sites is analyzed in offline mode to extract aggregate level business insights(Ajmera, Ahn et al. 2013). Most of the data is unstructured and generated in large volumes (big data) and therefore many of the organization are not capable to extract meaningful and actionable information in a timely fashion. Furthermore, organizations are struggling to integrate their social data with their existing in house data(Vatrapu 2013).

  Researchers make a distinction between *Social Graph Analytics* and *Social text analytics. Social Graph Analytics* concern all the information that can be collected about the users and based on the users' actions. *Social text analytics* is all the user generated content that is created in interactions and conversations, and analyzed using Text Analytics(Vatrapu 2013).

Social Media Management (smM): emphasizes all the operational issues, managerial challenges and comparative advantages regarding the paradigm of social business. SmA shall be seen as a supplement to the six traditional types of management: human resources management, operations/production management, strategic management, marketing management, financial management, and information technology management(Vatrapu 2013).

The benefits of Social Media in the public sector

Governments agencies are using social media in increasing numbers. Government organizations around the world are experimenting with social media as a tool to relate with their constituencies and analysts are trying to use social media to reinvent the government-citizen relationship (Picazo-Vela, Gutierrez-Martinez et al. 2011).

Research based on a focus group interview with 250 public sector managers from Central Mexico has resulted in a conceptual framework which captures the several layers of complexity involved in digital government applications. The research shows how social media can be used in government organizations and points out perceived benefits by using social media. The findings are listed below (Picazo-Vela, Gutierrez-Martinez et al. 2011):

- Contribute to encourage a citizen's participation culture.
- Contributing to change the image that citizens have about the government, as a friendlier one.
- Provide legitimization and credibility.
- Enable better communications and encourage effective collaboration between government and citizens.
- Respect the time spent by citizens to obtain services.
- Elicit more honest responses from participants.
- Urge governments to act in that way: they have no other options; they should go into social networks since it is already a reality.

- People generating political capital because of accountability and transparency.
- Support to community.
- Act as direct communication channel between the citizen and the government, in a friendlier way.
- Contribute to lower costs and maximizing resources of the operations performed: generating indirect savings due to better communication, improving the review of specific issues or projects, government services and products.
- Allow the inclusion of citizens in the generation of content and information (E.g. YouTube, videos and comments to the videos, distribution and access to culture).
- User segmentation: we can know what information is required and when.
- Source of information to improve decision making.
- Allow governments to increase the knowledge about citizens.
- Attention to other kind of users not reached before.
- Well-targeted specific services that benefit the end user.
- Web 2.0 helps to improve the management and dissemination of information as digital information platforms require orderly and competent processing.
- In economic terms, the implementation does not require much investment.
- It is faster and more user friendly for dissemination and transmission of information and content.
- Serve as a tool for purposes of data collection or data compilation
- Enable updating of information
- Citizens can have information in less time, can be more informed, participate more, but also require more services.

Although all the above mention are positive things that can evolve from using social media there are also risks associated. Picazo-Vela, Gutierrez-Martinez et al. (2011) also underlined that risks and benefits frequently reflect two sides of the coin. Many of the listed benefits appear to be a solution to an existing problem articulated as a risk.

Bertot, Jaeger et al. (2012) means that the enthusiastic embracement of social media in government organizations is due to the well-organized Obama social media campaign. He further points out three essential benefits:

- *Democratic participation and engagement*, using social media technologies to engage the public in government fostering participatory dialogue and providing a voice in discussions of policy development and implementation.
- *Co-production*, in which governments and the public jointly develop, design, and deliver government services to improve service quality, delivery, and responsiveness.
- Crowdsourcing solutions and innovations, seeking innovation through public knowledge and talent to develop innovative solutions to large scale societal issues. To facilitate crowdsourcing, the government shares data and other inputs so that the public has a foundational base on which to innovate.

Another aspect that organizations need to have in mind is that social media is not the same as traditional CRM channels such as phone and email. People turn to the Facebook or Twitter page and expect attention and resolution to their concerns just as they would on a traditional CRM channels. Ajmerea, Ahn et al. (2013) has described how social media sites differ from traditional CRM channels:

- Every conversation on a social media brand page is public and hence visible to everyone. This has the advantage that other customers can read through posts and learn from them, but the disadvantage that a negative conversation can become viral in no time. This requires that enterprises act upon conversations in close to real-time.
- Another significant difference from the traditional CRM channel is that on a brand page, the enterprise needs to identify a relevant and actionable post (or thread) from a large number of ongoing conversation threads, all of which may not be relevant or actionable. While some-one calling a traditional help desk is typically looking for help, many posts on a brand page are not directly relevant to customer care. Posts irrelevant to a CRM function may include compliments, marketing messages, or spam.

- In yet another important difference, customers can participate in the conversations on a brand page, helping to solve problems of a complaining customer or answer the queries posted by another. Companies may want to encourage this kind of participation, because it helps increase customer loyalty, and also reduces the burden on the customer service representatives.

Social media allows firms to engage in timely and direct end-consumer contact at relatively low cost and higher levels of efficiency than can be achieved with more traditional communication tools. This makes social media not only relevant for large multidimensional firms, but also for small and medium sized companies, and even non-profit and governmental agencies(Kaplan, Haenlein 2010).

Success elements in social media

One of the challenges in social media is to get people involved. The trick is to give people a reason for getting involved. It does not matter if it is sharing a hilarious picture of people in compromising situations or debating what is the best diet. As long as people are participating, social media can be used to effectively interact and manage clients (Asad, Alhadid 2014). Studies have shown that organizations centralize their marketing activities in a few dimensions:

Online Communities: A company or business can use social media to build a community around its products/business. Vibrant communities create loyalty and encourage discussions, which can contribute towards business development and improvement.

Interaction: A Facebook page or Twitter account can notify all its followers of specific subjects quickly and simultaneously. Social networking sites enable greater interaction with the online community through broadcasting up-to-date, consumer relevant information.

Sharing of Content: The sharing dimension is about the extent to which an individual ex-changes, distributes and receives content in a social media setting.

Accessibility: Social media is easily accessible and requires minimal or no costs to use. Social media is easy to use and does not require any special skills or knowledge to use.

Credibility: It is all about delivering your message clearly to the people, establishing credibility for what you say or do, connecting emotionally with your target audience, motivating the buyer and generating loyal customers. Social media provides a very good platform for all businesses (big or small) to network and reach out to their target audience, connect with them directly and generate trust by listening to what they have to say.

Kaplan and Haenlein (2010) have addressed some of the challenges and opportunities of social media. They came up with 10 recommendations for companies who decide to utilize social media. Three of those recommendations specify how an organization should interact with its users:

Be Active. Social media is all about developing a relationship with someone and therefore, it is always advisable to take the lead and be active. It is important that the content is always fresh and relevant. Social media is less about highlighting the positive sides of your product, but rather engaging others in open and active conversations. Participants have the desire to actively engage and to become both producers and consumers of information, so called "*prosumers*".

Be interesting. Find out what they would like to hear; what they would like to talk about; what they find interesting, enjoyable and valuable. Develop and post content that fits these expectations.

Be unprofessional. Try to blend in with other normal users and there is no need to hire professional writers to manage the interaction. Social media users are people, who understand that things do not always go smoothly and they are willing to give free advice on how to do things better next time.

Consequently, Kietzmann, Hermkens et al. (2011) propose that social media marketing policies should be guided by the 4Cs:

(1) Cognise, which is understanding the social media environment, its functional implications for users, as well as identifying influences and gathering competitive information.

(2) Congruity between the functionalities of the social platform and the goals of the company based on an understanding that the company no longer controls the conversation and should increasingly focus on delivering consumer happiness and gathering consumer input.

(3) curate, meaning the company needs to be appropriately represented online and act as the curator of brand related social media conversations and implications, based on a better understanding of how and when to participate in the online conversations.

(4) Chase, meaning that companies constantly need to scan the social media environment, which involves following and understanding the conversations and interactions online.

Hodis, Sriramachandramurthy et al. (2015) criticize the 4Cs for having limited applicability for a specific social media environment such as, for example, Facebook. They agree that the 4Cs are very useful in helping companies identify desirable social media activities, but lack practical usefulness.

Creating social media measurements

Metrics have been used in research as well as in business to define goals, measure the degree of completion or the deviation from goals. Farris, Bendle et al. (2006) has defined a metric as a measuring system that quantifies a trend, dynamic, or characteristic. Furthermore, he suggests that metrics can be categorized into different groups depending on their nature: Amounts (volumes), percentages (fractions or decimals), counts (unit sales or number of competitors), ratings (scales) and indices (price index).

Farris, Bendle et al. (2006) disagree with Ailawadi, Lehmann et al. (2003) who suggested that the ideal metric should be: (1) grounded in theory, (2) complete (encompassing all facets), (3) diagnostic (able to flag downturns or improvements and provide insights into the reasons for the change), (4) able to capture future potential, (5) objective, (6) based on readily available data, (7) a single number, (8) intuitive and credible to senior management, (9) robust, reliable and stable over time, yet able to reflect changes in brand health, and (10) validated against other equity measures.

Farris, Bendle et al. (2006) argues that social media cannot fulfil these requirements based on the nature of social media. Other researchers agree on that some of the points in the ideal metrics cannot

be applied to social media. Point (5) objectivity is not appropriate when dealing with social media and researchers suggest that objectivity must be replaced by inter-subjectivity and pragmatic corridor of comfort and add that convenience of available data or metrics should not preclude the construction of theoretically indicated and more important metrics (6)(Peters, Chen et al. 2013).

Farris, Bendle et al. (2006) and Peters, Chen et al. (2013) both conclude that trying to pursue a silver-bullet metric for social media is ill-advised and probably not possible.

Culan, McHugh et al. (2010) suggest that organizations need to develop two types of metrics to assess whether the objectives for their social media platforms are being realized and to measure the value from these investments. They argue that the specific measures should reflect the objectives of the respective platform. For example, if Facebook is used to create a community then one set of measures should assess the community. The measure should indicate if the community is growing, the proportion of active members is, how are consumers engaging with the content the organization is posting, what is the quantity and tone of the discussion, and is the content being redistributed.

Vatrapu (2013) makes a distinction between two type of analytical measures *"Social graph analytics"* and *"Social text analytics*". Social graph analytic focuses on the actions of the actors, which covers the network of personal connections through which people communicate and share information online. Social text refers to the content that is created in the social community by interactions, conversations and discourses. This content can be measured by sentiment analysis, topic discussed, categories mentioned, keywords deployed etc.

Culan, McHugh et al. (2010) highlights that the four types of performance indicators developed for traditional information systems can be used for social media purposes. The four types are: Financial (e.g., cost reduction, cost avoidance or revenue), Organizational effectiveness (e.g., improved service tome, production or service quality, or customer satisfaction or retention), Personnel (e.g., employee satisfaction), System (e.g., measures related to IT performance or information security).

Bernoff, Li et al. (2008) have listed some possible objectives for different departments in an organization using social media applications. They argue that the quest is to tap into the groundswell

of social media and collect valuable information for business decisions. They have also come up with success metrics all depending on the objective. For customer support purposes, where the objective is to enable customers to help each other, they recommend measuring the number of members participating, the volume of questions answered online contra the decreased volume of support calls. For innovation purposes it is recommended to listen in on customers.

Hoffman, Fodor et al. (2010) have listed all the relevant matrices for social media applications organized by key social media objectives. By social media objective they are referring to brand awareness, brand engagement, and word of mouth. Their metrics for Facebook is shown in Table 2:

Brand Awareness	Brand Engagement	Word of mouth
• Number of members/fans	• Number of comments	• Number of reviews posted
• Number of installs of applications	• Number of active users	• Valence of reviews
• Number of impressions	• Numbers of likes on friends' feeds	• Number and valence of other users' responses to reviews (+/-)
• Number of bookmarks	• Number of user-generated items (photos, threads, replies)	• Number of references to reviews in other sites
• Number of reviews/ratings and valence +/-	• Usage metrics of applications/widgets	• Number of visits to review site page
	• Impressions-to-interactions ratio	• Number of times product included in users' lists (i.e. amazon)
	• Rate of activity(how often members personalize profiles, bios, links, etc.)	

Table 2 Metrics for social networks

A study published in the *International Journal of Market Research* has tested a model for calculating the value of social media for businesses (Aichner, Jacob 2015). The model measures the degree of corporate social media use (CSMU). The CSMU index is an overall index for how well a company is performing on a predefined group of social media platforms. The index consists of two components: the social media impact factor (SMIF) and a social media use factor (SMU). The SMIF is a measure of the relative significance of each platform in the equation, which does not have relevance for this project as the focus is on Facebook as the only platform.

However, the SMU factor is calculated by taking into account the frequency of social media activity by the organization as well as the related user reactions. It can be presented as a function of the number of the social activities and the user reaction to each individual activity:

$$SMU_{Platform} = f(social\ media\ activities, user\ reactions)$$

For that reason, the SMU factor is different depending on the platform. All the social media platforms are composed of different components. As a result, each of the individual social media platforms is assessed and individual criteria are established as how to calculate the corporate use of the respective platform. While a "like" on Facebook expresses a positive interest, a comment can express more engagement, but can also be a negative expression, or if someone shares a post, it is reasonable to weight it more in the equation than a "like". Therefore, every SMU factor needs to be calculated differently depending on the social media platform. Below is Aichner and Jacobs (2015) interpretation of how the SMU for Facebook shall be valued.

$$SMU_{Facebook} = Posts \frac{Likes + Comments * 5 + Shares * 10}{fans}$$

The equation shows how to calculate the value of a post by the organization. The number of likes, comments and shares is aggregated with comments valued five times more than a like and comments 10 times more valued. The sum is then divided by the number of fans of the organization.

Conceptual framework

As the literature has revealed social media has had a great impact on the traditional media channels and has forced organizations to turn to social media. Although most of the organizations are aware of the importance of using social media, the literature points that many are having a hard time convincing management, because they find it difficult to show a return on investment. Especially governmental organizations, which do not have a product to sell and therefore find it hard to report financial profitability like increase in sales etc. However, these kind of organizations can measure optimizations of services and see the social media investment as a relationship-based currency or a social currency, as the literature pointed out.

In order to extract value from all the social data it is important to include all aspects that come with social business – the management-, engagement- and analytical-parts. This thesis focuses only on the analytical part although all three elements are highly dependent on each other in order to reap the full benefits from social media.

Due to the still emerging new social media platforms and the huge variety of social media platforms, the literature confirms there is no single silver-bullet metric that addresses all analytical elements. But, after going through the literature and learning about the fundamentals of social media and all the perceived benefits, this paper identifies a set of two distinct social media parameters that organizations can use. Bearing in mind the purpose of this thesis, a dual metric framework is proposed specifically for Facebook, see Figure 4.

Individual		**Comparative**		
Innovation	***Postings***	***Awareness***	***Engagement***	***Interaction***
• Dialogue - Listening - Tone • Content substance	• Behavior - Content type - Posts	• Community - Likes - Shares	• Comments • Active users • Mentions	• Dialogue - Reception - Response - Activity

Figure 4 A social media metric framework for Facebook

The framework contains the important factors that the literature has highlighted and is composed of individual parameters and some comparative parameters. The individual social media parameters cover the individual insights an organization should tap into in the social media groundswell in order to make better data driven decisions and to better navigate in social media. These parameters are individual and specific to organizations as they contain data only applicable to the individual organization as most of the content is user generated.

The individual parameters are analogous to the *Social text analytics* (Vatrapu 2013), where the emphasis is on extracting valuable insight from the social text that is generated. The individual parameters are grouped into two sub-parameters: *Innovation* and *Postings.*

The *Innovation* parameter represents the importance of tapping into social media groundswell for valuable insights. By monitoring the conversations and topics that the users are talking about, the organization can acquire valuable information. By making analysis on the social text, organizations can get an indication of what their users are saying and struggling with and react to it. Sentiment analysis, where the words are ranked based on positive and negative values, can give the organization a sense of how the tone is among their users. All these analyses have innovative value that the organization can choose to act upon.

The *Postings* parameter examines the content that is posted both in terms of type and substance. Organizations post many different kinds of materials: text with and without pictures, videos, links etc. An analysis of the substance of the content will give the organization an indication of how their posts are perceived and if the construction of some posts are favored by the users. The perception is measures by the amount likes, comments and shares.

The comparative parameters cover the important factors an organization should measure and compare to its equals in the social media setting. They are developed so organizations have tangible measures which they can hold op against other measures as a single measure is a bit empty in itself. Similar to *Social Graph Analytics* (Vatrapu 2013) the comparative parameters focus on the actions of the users; how much are they sharing, liking and commenting etc. All fit for being compared across different social communities to equip organizations to make reasonable decisions about their social

actions and reflect on their positioning in their social media environment. For example, if an organization decides to create a measurement of how many likes they generate per fan, the measure in itself does not allude much and forces the organization to interpret and conclude on the measure, if it is good enough or not, which seems very difficult and irrational.

The comparative parameters are grouped into three parameters defining the purpose of the activities: *Awareness, Engagement,* and *Interaction*.

The purpose of *Awareness* is to measure the social media community and the respective responsiveness of the community. The *Awareness* parameter reflects how good the community is at spreading the announcements that the organization makes, and it also reflects how big the community is. It is measured by the likings of the posts the organization posts and how often the posts are shared. The size of the community is reflected by the members of fans and to which extent people are talking about the organization.

The *Engagement* parameter mirrors how committed the users are and how engaging they are in the organization's social media environment. The parameter is measured by the users' involvement by measuring the participation through enquiries embodied by comments and the number of unique users. The number of unique users is measured in order to have a better portrait of the community so not only the most demanding/noisy (users who post many questions) users dominate the representation.

The *Interaction* parameter gives an indication of how good an organization's dialogue is with the social media environment. The interaction between the organization and its users is measured by how well the users react to the organization's response. The response is measured by likes on the organization's replies. Another factor is the activity of the organization, which represents how good they are at answering questions and how active they are in terms of posting.

Cases

The organizations used in this thesis are presented from their perspective on social media. The presentation will emphasize each organization's purpose for using social media as a communication channel. An overview of all the social media platforms that the individual organization uses will be presented in form of the recognizable icons of the respective social media platform.

The overall intention with the presentation is to give the reader a light sense of each organization's standpoint in the social media environment. The presentation will also act as a knowledge base which can be used to explain some of the outcomes in the analysis if necessary.

SKAT

SKAT is a Danish agency under the Ministry of Taxation which is responsible for assessment and collection of taxes, customs, debt to the state, and VAT in Denmark. The organization has approximately 6400 employees and an annual operating budget of 4.9 billion DKK (SKAT 2016).

In 2013 SKAT appointed a new director, Jesper Rønnov, who has incorporate social media as a part of his daily work. He is known as being one of the best leaders in Denmark at endorsing and using social media. His presence has had a great influence on the use of social media in SKAT (interview).

SKAT feels that it is their responsibility to be on social media in order to communicate with the modern society. Social media is used to inform and educate the Danish taxpayers about their tax issues. The goal is the help the taxpayers understand their taxes and new tax legislations. Social media is a supplement to their other communication channels, where they can reach a big audience with relatively little resources and relieve some of the pressure on their phone lines (interview).

SKAT has a social media team ready to answer questions from their Facebook and Twitter accounts. They have strict policies on how to answer their clients and what kind of question they are allowed to answer. Although they have established guidelines for their behavior on social media they do not have any formal strategy for social media. Even though other parts of SKAT are steered by KPI controls they have not been able to establish KPIs for their social media activities (interview).

Facebook and Twitter are their main social media channels, but they have also begun creating video content for YouTube and sharing pictures on Instagram and Pinterest. LinkedIn is used for networking and scouting future employees (SKAT 2016).

Figure 5 SKAT social media platforms.

Comparative organizations

The organizations that will be presented below are selected to take part in the comparative analysis of SKATs Facebook activities. The selected organizations are chosen based on their characteristics and their role in society. All of the organization are government authorities which serve the public. Four Danish municipalities are selected and the Australian Taxation Office. The Danish municipalities are selected because they operate in the same social media environment as SKAT and have the same actors. The usage of internet technologies and social media technologies differs depending both on the nation and the culture(Pew Research Center 2014). Therefore, there should not be any cultural or technological barriers among the Danish organizations and SKAT.

The organizations are all service organization, which means they all use social media to optimize their processes instead of pursuing increased sales, which a product-selling organization would emphasize heavily.

The Australian Taxation Office was chosen in order to get an organization outside of Denmark, but primarily because of their social media efforts. A report on *Social Media Technologies and Tax Administration(OECD 2011)* made by The Organization for Economic Co-operation and Development (OECD) showed that the Australian Taxation Office was one of a few countries in the world which had a formal social media strategy and used social media technologies for internal and external communication. The report also shows that the Australian Taxation Office was the only country that used all social media technologies. Therefore, the Australian organization is an interesting choice and even more interesting to see how the Danish organizations perform compared to it, bearing in mind the possible culture difference.

The municipality of Copenhagen

Copenhagen is the largest municipality in Denmark and has over 590.000 citizens(Danmarks statistik, 2016). Over the past years the municipality has experimented with social media and it has become a central tool for communicating with the citizens of Copenhagen. Social media is seen as supplement to their normal contact with the citizens.

Social media is used to inform the citizens about culture, events, offers, initiatives and services in Copenhagen. Facebook is specifically used to spread the news about events within the municipality and to inform the citizens about all the self-service solutions available at www.kk.dk. The intention with Facebook is also to get response and input from the citizens and learn about their perception of the municipality. The Facebook team consists of 4-5 employees who are ready to answer questions and update the Facebook page.

Twitter is also used in a similar way. The intention with Twitter is to publicize the City Council and political decisions that are made, but also to provide information about general services. Twitter will also be used in situations of crises to alert, inform and update citizens about the current situation. It is also used as a monitoring tool to listen in on how people of Copenhagen and visitors perceive the city and the municipality.

Instagram is used to share the city's soul and charm by using the hashtag #voreskbh. The municipality also uses this media to share the daily work of its employees so people see the municipality from a humanistic perspective.

The municipality of Copenhagen has, as one of the few municipalities in Denmark, chosen to use Snapchat as one of their social media channels. This media is intended to create awareness among the younger generation of citizens and share the everyday life in the big city.

(Københavns Kommune, 2016).

Figure 6 Copenhagen social media platforms

Australian Tax Authority

The purpose with social media is to communicate with people in a meaningful way. With the use of social media channels, such as Facebook, Twitter, and LinkedIn they are able to engage in a two-way communication with their clients while they are online. They also highlight the importance of their clients sharing information to other citizens, so the word spreads and information is distributed.

In the past few years, they have worked hard to expand their social media community to provide more Australians with an alternative way of accessing information about tax relations. Their goal is to provide a trusted source of tax and news online while empowering the community so people and businesses can access the information they need easily.

They have made use of paid and unpaid social media messaging for promoting their online lodgement options. With this technique, they are able to influence the ability to get their content shared beyond their immediate audience and drive traffic to their other webpages.

Their social media efforts have resulted in a huge increase in the number of questions from taxpayers and their primary task is to ensure that their clients get a quick response and a seamless experience. Therefore, social media has become their preferred method of contact with their clients.

They have begun to develop YouTube videos with the goal to inform and educate their clients about their services and products. In 2014, they uploaded 243 videos and received 1,088,233 views, which brings the total views on YouTube to over 4 million in total.

Facebook has also been one of their most successful social media platforms. In 2014 they posted many alerts regarding tax frauds and these posts were viewed over 2.4 million times and was shared over 50.000 times. By using Facebook, they are able to inform, update and educate their clients at a reasonably low cost compared to other media.

(Australian Government, 2016)

Figure 7 Australian Tax Authority social media platforms.

The municipality of Roskilde

Roskilde has just above 85.000 citizens and is the 15th biggest municipality in Denmark (Danmarks statistik, 2016). In 2013, the municipality of Roskilde formally launched a social media strategy with citizen involvement initiatives as one of the things they focused on. In the Council's vision, it says:

"*Roskilde must be a municipality that puts citizens at the center and focusing on citizenship promotes their active participation in local democracy by developing new forms of dialogue.*"

In order to fulfill their objective, they formed a social media strategy as a basis for the municipality's work with Web 2.0 technology. The strategy aims to nudge citizen involvement and create a better dialogue.

Social Media serves as a platform for dialogue between citizens and the municipality, which can support local democracy, break down barriers for participation and create the possibility for everyone to be heard. One of the goals is to inform citizens about many of their self-service solutions and to involve citizens in municipality decision-making.

One of the ambitions is to become the leading municipality in Denmark when it comes to using social media as a communication channel. In order to achieve their goal, they put a lot of emphasis on engagement and being active. Citizens shall receive an answer to their question within 24 hours and one or two tweets and Facebook updates shall take place every day.

The municipality is present on multiple social platform consisting of Facebook, Twitter and YouTube. Around 20.000 DKK are budgeted each year to pay for ads and promote the social media strategy.

(Roskilde Kommune, 2016)

Figure 8 Roskilde social media platforms.

The municipality of Aalborg

The municipality of Aalborg counts over 200.000 inhabitants and is perceived to be one of the best municipalities in Denmark when it comes to using social media (Danmarks statistik, 2016).

The municipality wants to be an open and digital organization that always lives up to the expectations and desires of communication and dialogue - both in relation to employees and in relation to the outside world. The overall policy of communication in the organization consists of three principals, namely that communication must be accessible, understandable and recognizable. The whole communication strategy is divided into eight part-strategies and one of those regards social media.

Aalborg municipality is present on Facebook to support the democratic dialogue with citizens. The Facebook page shall function as a modern way of communication and try to engage and show openness towards the public. The aim is to create awareness and establish a network with relevant members of the municipality. The municipality has one official Facebook page, but they also create other Facebook sub sites when they launch campaigns and other projects.

The official Facebook page is used to spread news and to disseminate activities that occur in the municipality. The page shall also operate as a customer service channel that citizens can turn to with their questions and take part in debates regarding the municipality. By using Facebook as a communication channel the municipality expects to reach a much wider audience and interact with a new group of people that normally do not have any contact with the municipality. Therefore, they expect their social media efforts to expand their demographical and democratic grasp.

(Aalborg Kommune, 2016)

Figure 9 Aalborg social media platforms

The municipality of Esbjerg

In Esbjerg municipality there are just over 115.000 people (Danmarks statistik, 2016) and it is the fifth largest municipality on Facebook in Denmark. The municipality has an overall channel strategy for interaction with their citizens. Their vision is to give the citizens a thoughtful and flawless service experience regardless of what channel they use to interact with the municipality. By service experience they mean that the service is both effective for citizens and local authorities thereby saving time, money and energy.

The primary reason the municipality of Esbjerg has decided to use social media is to get into dialogue with the citizens. They value the opinions and views of the public and use social media to listen to what citizens have to say. When there are big projects in the community, the municipality often uses social media to get an indication of what the public thinks of the project. Therefore, a lot of emphasis is on the posts posted on their social media channels. The municipality has created a strict process for creating and evaluating posts before a posting. As most of the posts are intended to start a debate, the content must be thoroughly considered both in terms of debate value and appropriateness.

The municipality is aware that their debating social media users are expecting a fast response to their question/comments, therefore they put a lot of emphasis on answering their citizens. Their Facebook page is checked daily and sometimes in the weekends.

Although the primary purpose is to listen to the citizens, the municipality also tries to educate and inform the citizens about their services and social offers. The municipality wishes to use the social media platforms to create awareness around the municipality's values and identity.

(Esbjerg Kommune 2016).

Figure 10 Esbjerg social media platforms

Methodology

The aim of this chapter is to give the reader an overview of the research approach and research design of this thesis. The following section will give grounds for what research design and methods were used.

Research philosophy

The research philosophy is an important part on any research. The philosophy reveals how the researcher views the world and therefore has a great impact on what approach is taken in order to answer the research question. The taken-for-granted assumptions about human knowledge and about the nature of the realities encountered inevitably shape how a research question is understood as well as the associated research design (Saunders 2011).

This research has a positivistic approach as positivism adheres to the view that only factual knowledge gained through observations including measurement, is trustworthy. In positivism research the role of the researcher is limited to data collection and interpretation through an objective approach(Saunders 2011).

All the data in this project has been collected using a mono method quantitative design as all the data has been extracted from Facebook from the respective Facebook walls considering the world to be external and objective. Although a mono method is chosen and the research has a positivistic approach, the thesis also uses a form of qualitative data analysis in the content analysis in order to subjectively categorize the Facebook comments into groups, which is normal in mono method design(Saunders 2011).

A case study was found as the natural choice because the research question evolved from a conversation with social media representative at SKAT. Therefore, SKAT was chosen as the primary case to examine and answer the research question. The circumstances and research approach resulted in a longitudinal study spanning from 01.01.2015 till 31.12.2015 in regards to the comparative parameters and from 2013 till 2016 regarding the individual parameters.

Data collection and data analysis

The following section will describe how the data was collected and processed. The data used in this thesis will be presented and explained in order to give the reader an overall understanding of how the results have been developed.

The data and data source

Most of the data used in this thesis was extracted from Facebook using a social analytics tool named SODATO. The tool was used to extract the data from the organizations respective walls in the time period stretching from 01.01.2015 to 31.12.2015 with regards to the comparative parameters.

The data used in the content analysis is not only for the year 2015, but spans from 2013 to 2016. The longer time interval was chosen in order to get as much data as possible. Throughout this period, SKAT has made 227 posts which have generated 28690 Likes, 5759 comments and have been shared 12922 times.

The data was exported as a raw csv file and needed to be cleaned for noise as there was inconsistency in the data. The data was UTF-8 tab delimited and the columns of the data can be seen in Figure 11.

ActionType	PostDbId	DbId	Fbid	CreatedDate	UpdatedDate	PostType	ActorId	ActorName

Link	Caption	Description	CaptionNamePost	StatusType	Story	Picture	PropertyName	PropertyText	ShareCount	TextValue

Figure 11 Data columns

The columns are explained below in order to give the reader an indication of how that data is structured. The clarification of the data will also enhance the reader's understanding of the analysis section and make the analysis more transparent.

- **ActionType:** specifies the specific action of the user as a post, postlike, comment, commentlike, commentreply or commentreplylike.
- **PostDbID:** a unique id for a specific post.
- **Fbid:** a unique id for the specific action on a post.
- **CreatedDate:** the date the action was taken.

- **UpdatedDate:** registers the latest action.
- **PostType:** specifies what type of post is posted. The types are: status, link, photo, video or blank if it is not a post.
- **ActorId:** a unique Facebook user id.
- **ActorName:** specifies the name of the actor.
- **Link:** shows the URL if a link is posted.
- **Caption:** a short description of the link. For example, skat.dk.
- **Description:** short text describing the link.
- **CaptionNamePost:** name of the caption.
- **StatusType:** specifies the type of the status as wall_post, added_photos, added_videos, mobile_status_update, shared story or blank it the post is not a status update.
- **Story:** tracks the actions that occur on the wall and wall updates. For example, cover picture changed.
- **Picture:** URL to the posted picture or blank if no picture is attached the post.
- **PropertyName:** has the value 'length' if a video is added.
- **PropertyText:** specifies the length of a video if a video is added.
- **ShareCount:** specifies how often a post has been shared.
- **TextValue:** contains the text from comments added.

Not all of the above mentioned datatypes are used in the analysis, but those which are, are either in raw form or calculated into ratios to fit the respective objectives of the analysis.

Facebook has a built in measurement that measures how many unique users "*talk about"* a specific Facebook page in a seven-day period. The measure is calculated by counting the number of unique users who either like the page, post on the wall, like a post, comment on a post, share a post, mention the post in a post of their own, tag the page in a photo, and check ins (Darwell, Brittany 2012). This data was manually collected for each organization in week number 16 in 2016.

Because the data and the analysis are so intertwined the calculation methods of the different graphs will be explained as a part of the analysis.

Content Analysis

One of the objectives of this thesis is to analyze the content that SKAT has posted on their Facebook wall. In order to analyze the content a content analysis was conducted.

Content analysis is a research method that is seen as a flexible method for analyzing textual data. It is typically used to analyze hymns, newspapers, magazines, verbal or visual communication messages (Elo, Kyngas 2008). There are different types of content analysis including quantitative and qualitative methods, all sharing the central feature of systematically categorizing textual data in order to make sense of it (Forman, Damschroder 2008).

The researcher chooses the specific type of content analysis approach depending on the theoretical and substantive interests of the researcher and the problem being studied(Hsieh, Shannon 2005). In this case the goal is to see if the content performs differently depending on the content and if humor has any effect on the performance. Therefore, a more qualitative content analysis of the 227 posts SKAT has posted has been chosen.

Content analysis has procedures for collecting and organizing information in a standardized format that allows analysts to make inferences about the characteristics. Through content analysis, it is possible to distill words into fewer content related categories. When grouped into these categories, words and phrases are defined to represent each of the categorized groups. Therefore, it can be used to develop an understanding of the meaning of communication and to identify critical processes concerning meaning, intentions, consequences, and context (Elo, Kyngas 2008).

The content analysis performed in this thesis is a qualitative content analysis where the data is categorized using categories that are generated inductively from the data by examining it thoroughly (Forman, Damschroder 2008). By reading most of the posts, it was relatively soon clear, that almost all post could be categorized within four groups. 210 of the 227 post could all fit within the four categories of posts: Alert, Storytelling, Information and Job opportunity. The 17 other post, which could not be categorized into any group, where consider as noise and where filtered out. Furthermore, a sub category, Humor, was created as a fifth element to see if it was present in any of the other categories.

All the categories were created as new columns in the dataset. All the columns were given the starting value 0 and then examined to see which category they belonged to, and if there was any humoristic tone in the post. When the category was confirmed, the respective category was given the value 1 and if humor was present, the humor column would also be given the value 1, see Figure 12. Thereby, the date was ready to be further processed and easy to navigate within the different post categories.

ShareCou	Alert	Storytelling	Inforr	Job	Humor	TextValue
1363	1	0	0	0	0	ADVARSEL
1342	1	0	0	0	0	PAS PÅ FAI
534	0	0	1	0	0	SKRU NUM
492	0	0	1	0	0	FORDOBLI
429	0	0	0	1	1	NYT JOB SI
369	0	0	1	0	1	KØRSELSFF

Figure 12 Content analysis categories

In content analysis it is important that the data is coded correctly and therefore it is recommended that multiple coders review the coding. When coding conditions have become substantially stable a coding agreement must be established, see Table 3. A coding agreement is when two or more coders who code text data independently, using the same coding conditions, can consistently apply the same codes to the same text segments(Forman, Damschroder 2008). The mechanisms are applied to ensure rigor in content analysis, but regardless of how detailed codebook definitions may be or how sound the conceptualization process may be, coding discrepancies will always occur as long as people code(Elo, Kaariainen et al. 2014).

Alert	Storytelling	Information	Job opportunity	Humor
▪ All messages that contain any attentions.	▪ Stories about SKAT. ▪ Stories the give the fans insight to SKAT. ▪ Shared experiences at SKAT.	▪ Posts that educate and inform. ▪ Promote SKAT services.	▪ All posts that concern job opportunities at SKAT.	▪ All posts that contain humor. ▪ All posts that contain irony. ▪ Contain humoristic exaggeration.

Table 3 Content analysis coding agreement and categories

The coding agreement above was mainly created to specify what is included in each category, rather than creating consensus, as I was the only coder in the project. Normally, when there are multiple coders, the coding is compared to check the validity of the coding. Typically, a Krippendorff's alpha coefficient is calculated, which is a statistical reliability measure of the agreement among the coders(Elo, Kaariainen et al. 2014). There is no doubt that the project would have benefitted from having multiple coders and the Krippendorff's alpha would have added a tangible measure of reliability to the coding, but the lack of resources made it not possible.

All of the posts were examined and coded to the respective category, and were also checked to see if any humor was present. There was little doubt about which posts belonged to each category due to the distinct nature of the posts. However, the coding of humor was the only category which required a bit of thought, as humor can come in many forms and irony can be hard to detect as it is a subjective assessment. For example posts like:

"SKAT VARMER OP - Et ton smuglervarer blev i mandags omdannet til fjernvarme på Amager Ressourcecenter...[1]"

These kind of posts can create doubt as it can be hard to sense the humoristic tone. This specific example was considered as a post with humor because of the headline and the way the situation is formulated.

Sentiment and emotion analysis

The dataset extracted from SKATs Facebook wall was sent to the Computational Social Science Laboratory at Copenhagen Business School for further analysis and classification of the text. All the text values, which is all the posts, comments, and commentsreply in the dataset, were analyzed and given a sentiment value and an emotion value.

The sentiment analysis examines the text to determine how positive, neutral, or negative the text is based on the balance of the three parameters. The most dominant parameter determines the label of the text, see Figure 13.

The emotion analysis examines the text for six different emotions; joy, sadness, disgust, fear, anger, surprise. The mechanism is similar to the sentiment analysis and the most dominant parameter determines the label of the text, see Figure 14.

Language	Label	Positive	Negative	Neutral	ActionType	PostDbId	DbId
danish	Positive	0.6	0.2	0.2	POST	185345	185345
danish	Positive	0.83	0.04	0.13	COMMENT	184985	1682033
danish	Negative	0.03	0.94	0.03	COMMENT	184985	1682034

Figure 13 Sentiment analysis

[1] Database ID: 188776

Language	Label	Joy	Sadness	Disgust	Fear	Anger	Surprise	ActionType	PostDbId
danish	Joy	0.56	0.07	0.12	0.03	0.14	0.07	POST	184985
danish	Joy	0.71	0.12	0.04	0.04	0.04	0.04	COMMENT	184985
danish	Disgust	0.17	0.06	0.39	0.05	0.28	0.06	COMMENT	184985

Figure 14 Emotion analysis

Tools used

SODATO was used to extract all the social data from the Facebook walls of the examined organizations. All the extracted data was imported into SQL Server 2014 Management Studio so the data could be easily managed and handled. Most of the data that was extracted from SQL Server 2014 Management Studio was copied to Excel where the data was modeled and most of the calculations and graphs were prepared.

IBM SPSS Statics 22 was used to do the statistical test of the impact of humor in Facebook posts. RefWorks, which is a web-based bibliography and database manager, was used to manage all the references and citations used in the thesis. The bibliography was also automatically created by RefWorks.

The advanced resourses of Computational Social Science Laboratory (http://cssl.cbs.dk/) at Copenhagen Business School were used to do the sentiment analysis and the emotion analysis.

TagCrowd (www.tagcrowd.com) was used to create a word cloud of the Fear emotions from the emotion analysis, and a sorting list was created to remove many of the conjunctions in the word cloud. The sorting list can be found in the Dropbox-folder among all the other source files.

Qualitative data

An informative interview was made with a spokesperson from SKATs communication department, which provided knowledge about SKATs social media activities. The interview was used to create an understanding of SKATs social media usage, but also to find out how they measured and monitored their social activity. The interview helped confine the topic for the thesis by revealing what they wanted to measure. The interview was held open with a couple of predefined questions.

Limitations

Due to the scope of the thesis, the strategical aspects of social media are not covered. All the organizations are lightly described and presented to get a sense of their social media standing and therefore secondary data is sufficient.

Reliability

The reliability of this thesis relates to whether it is possible to remake the thesis and get the same result. It is not difficult to replicate the thesis due to the fact that most of the thesis is based on quantitative data from Facebook. All the calculations and graphs are derived from this data and only modified with inspiration from Aichner and Jacobs (2015), with regards to assessment of the value of comments, likes, and shares. The only subjective assessment is in the content analysis where the posts are categorized based on subjective judgment. Therefore, the reliability can be considered relatively high, given that the tools and methods used in this thesis also have a high reliability and the data is collected in the same time intervals.

Analysis and discussion

The analysis is structured according to the proposed social media matric parameters. First, the individual parameters will be analyzed with the intention to extract valuable information from the dialog and content substance in SKATs social media community. Secondly, the comparative parameters will reveal how SKAT is performing in terms of awareness, engagement and interaction compared to the selected organizations.

Individual parameters

Innovation

Innovation

The innovation parameter deals with the social text that is created in the social media community. The forthcoming section will demonstrate how the text can be analyzed and what kind of value can be harvested.

The sentiment analysis gives SKAT a feel for the tone in their Facebook community. Figure 15f shows the tone in all the posts that are posted on SKATs wall. The chart shows that 70,36% of all posts are positive while 23,86% are negative and 5,78% are neutral.

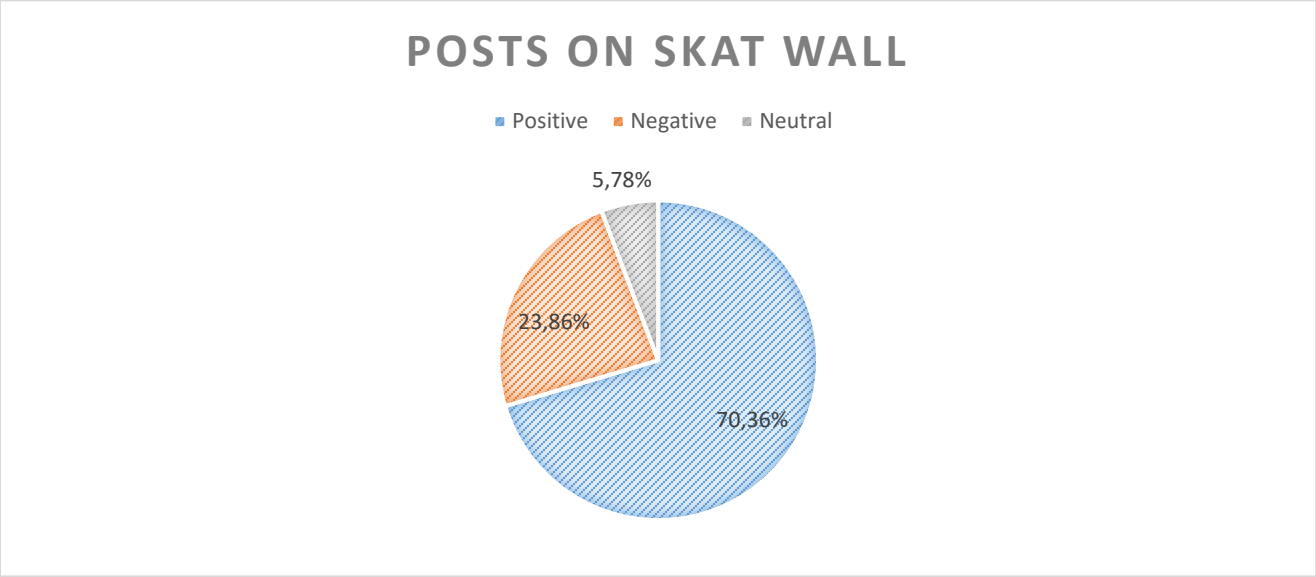


Figure 15 Sentiment analysis on posts on SKATs Facebook wall.

The posts posted on SKATs wall are mainly inquiries in form of questions or complaints where the users show their dissatisfactions. The sentiment analysis shows that almost a quarter of these have a negative tone, which can be hard to assess the extent of. People contact SKAT either because they want help or they have a complaint. Almost all complaints contain some kind of frustration, which can easily be expressed with a negative tone, and therefore there will always be a relatively high part with a negative sentiment. In addition to the complaints having a negative tone, the questions can also have a harsh tone.

Nevertheless, the majority of the posts were positive which shows that most of the people interact in a friendly and proper manner. Picazo-Vela, Gutierrez-Martinez et al. (2011) mentioned the rapid spread of bad reputation as one of the risks of using social media, and therefore, SKAT needs to keep an eye on the sentiment.

In order to examine the previous instance on a deeper level, the emotion analysis is applied to better understand the feelings involved. Figure 16 shows a distribution of how the posts were labeled regarding emotions. The chart shows that 57,5% of the posts are categorized as Joy, which also corresponds with the high positivism in the previous figure. Although the similarity, the emotion chart shows that 31,8% of the post are Fear and 7,2% are Anger etc., which gives a higher level of insight than the previous graph. The Anger factor is something that always will be present, similar to the negativity in the sentiment analysis, but the high percentage of posts categorized as Fear (31,8%), is without question something SKAT should look into. SKAT has been in many scandals in 2015, which could explain the high percentage of fearful post.

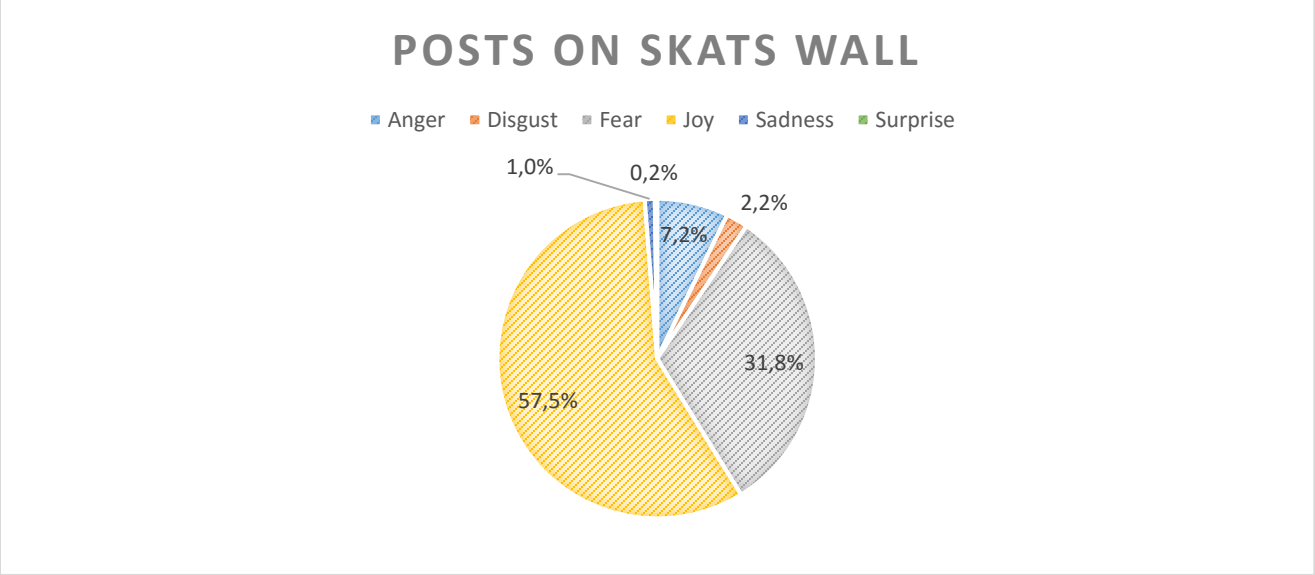


Figure 16 Emotion analysis of posts on SKATs wall

Figure 17 shows the sentiment analysis of all the comments made in SKATs Facebook community. The chart has an even more positive tone then the previous sentiment figure. The positive comments account for 91,35% of the total comments, 1,38% are neutral while only 7,27% are labeled negative.

The figure covers all the comments made in the community and thereby it can be concluded that the users are interacting in a respectful way. A post can have many comments from many different users and therefore, the community seems healthy as the chart portrays a positive tone. Thereby, the claim made by Picazo-Vela, Gutierrez-Martinez et al. (2011) that one of the perceived benefits by using social media as a communication channel is that the interaction becomes more friendly, seems to be true in this case. Due to the positive sentiment, the possibility of co-creation, as Bertot, Jaeger et al. (2012) pointed out, can be exploited. Co-creation refers to instances where governments and the public jointly develop, design, and deliver government services to improve service quality, delivery, and responsiveness.

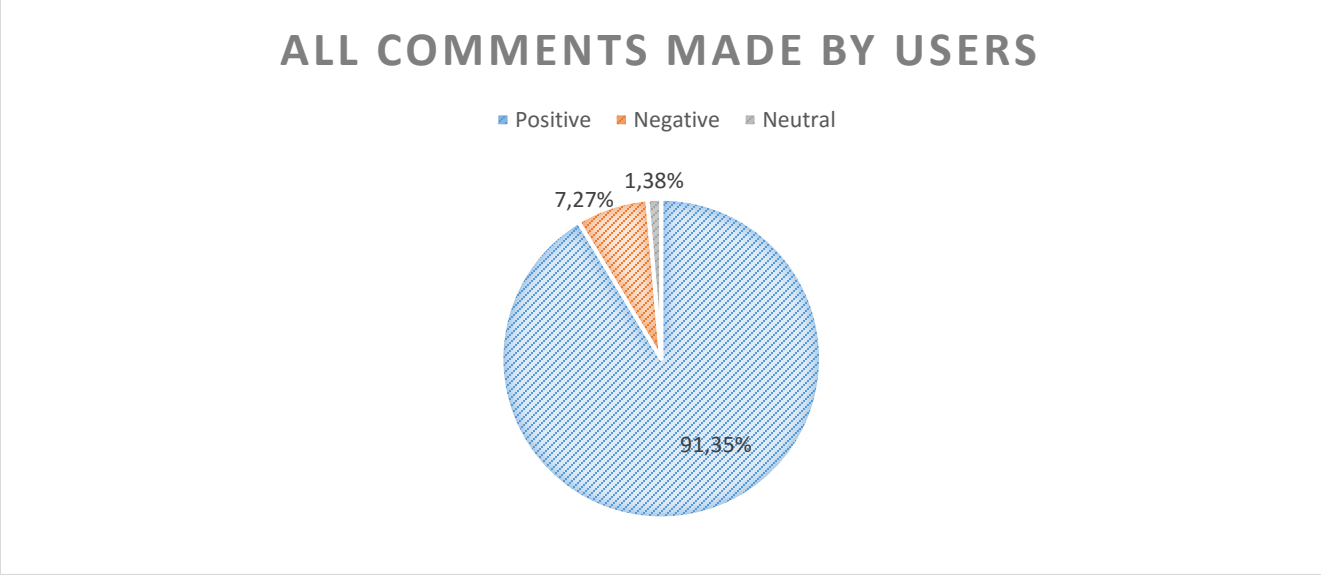


Figure 17 Sentiment analysis on all comments made in SKATs Facebook community.

Figure 18 show the respective emotions attached to all the comments made in SKATs Facebook community. The chart shows that the main part of the users post joyful comments. Compared to the previous emotion analysis, the fear factor has decline significantly from 31,8% of SKATs own posts to 17,95% of all the comments in the community. The chart shows that in general the emotions are less concerning in the community and there is a lot of joyfulness.

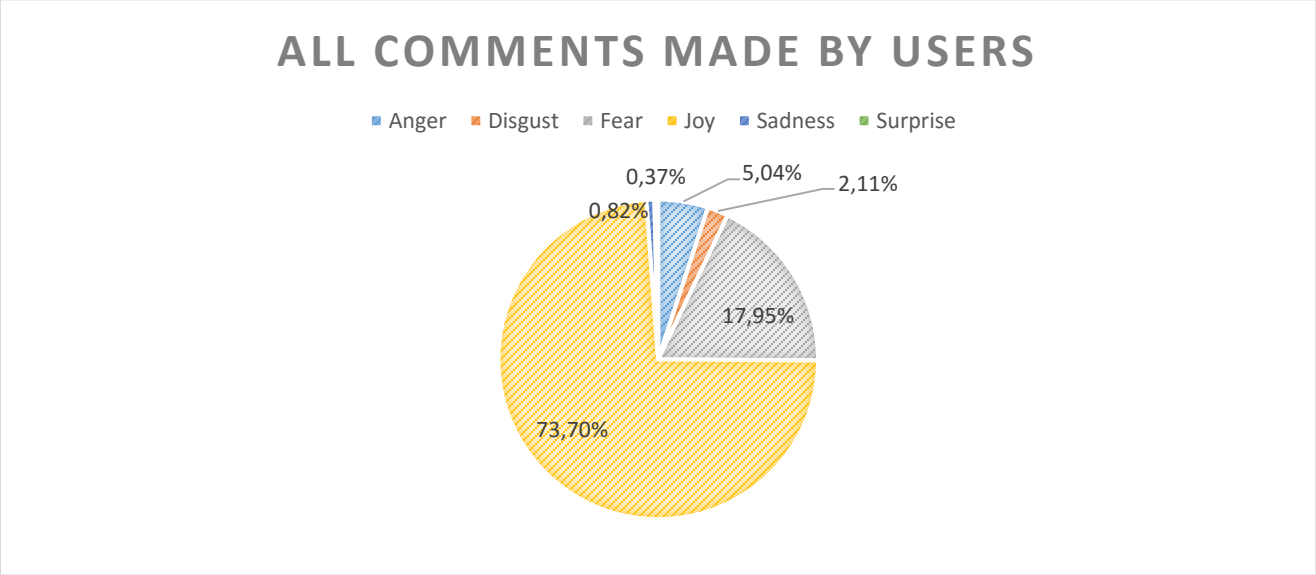


Figure 18 Emotion analysis on all comments made by users

The sentiment analysis made on all the comments posted on SKATs posts shows a similar positive reaction. Figure 19 shows that only 13,21 % of the comments are negative while 84,32% are positive and 2,48% are neutral.

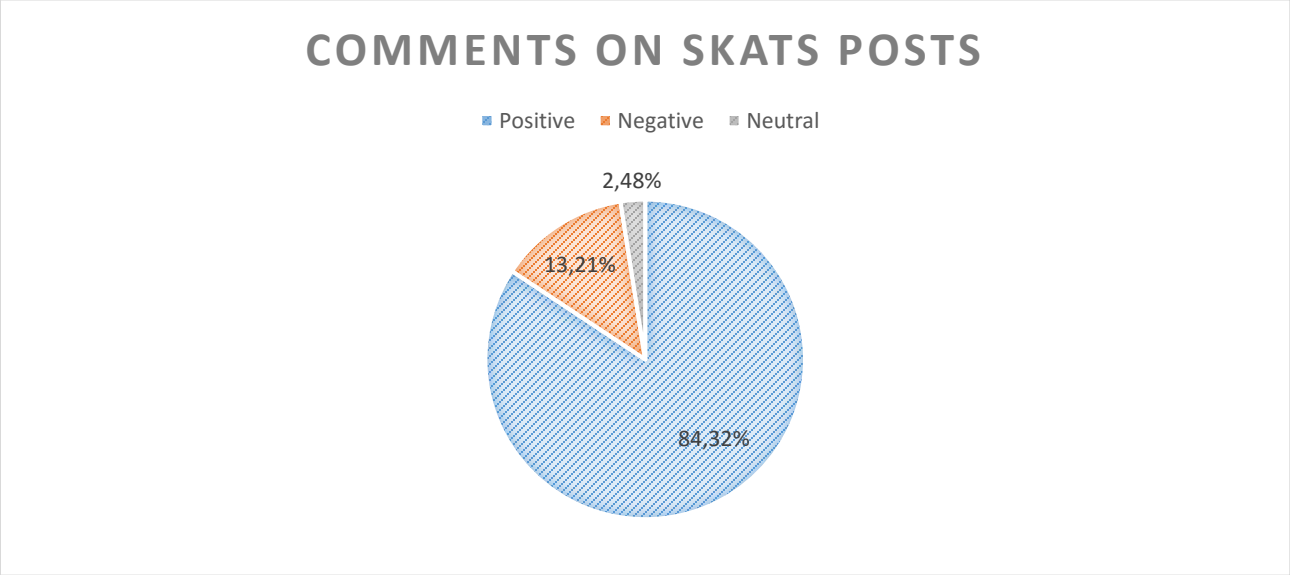


Figure 19 Sentiment analysis on comments on SKATs posts.

Similar to the other emotional reactions, the reaction on SKATs posts shows that joy is the most expressed emotion, Figure 20.

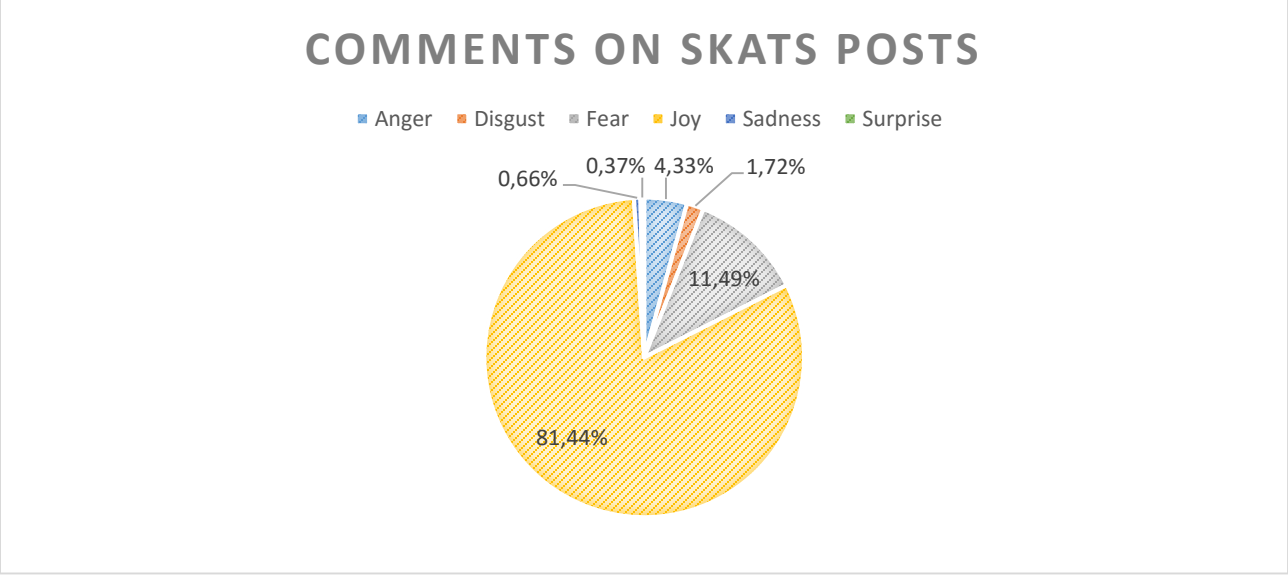


Figure 20 Emotion analysis of comments on SKATs posts

Figure 21, shows the sentiment course in 2015. The graph indicates that the users are more active in some periods than others. In March and July, especially, there is much activity and the negative comments also peak in these periods. The level of activity is higher in July than in March, but the negative comments represent a bigger proportion of the activity in March. The explanation for the high negativity in March is most likely that that is the month when people can see if they owe SKAT money or get money back from SKAT. Otherwise, the graph does not show any alarming trends that SKAT should worry about.

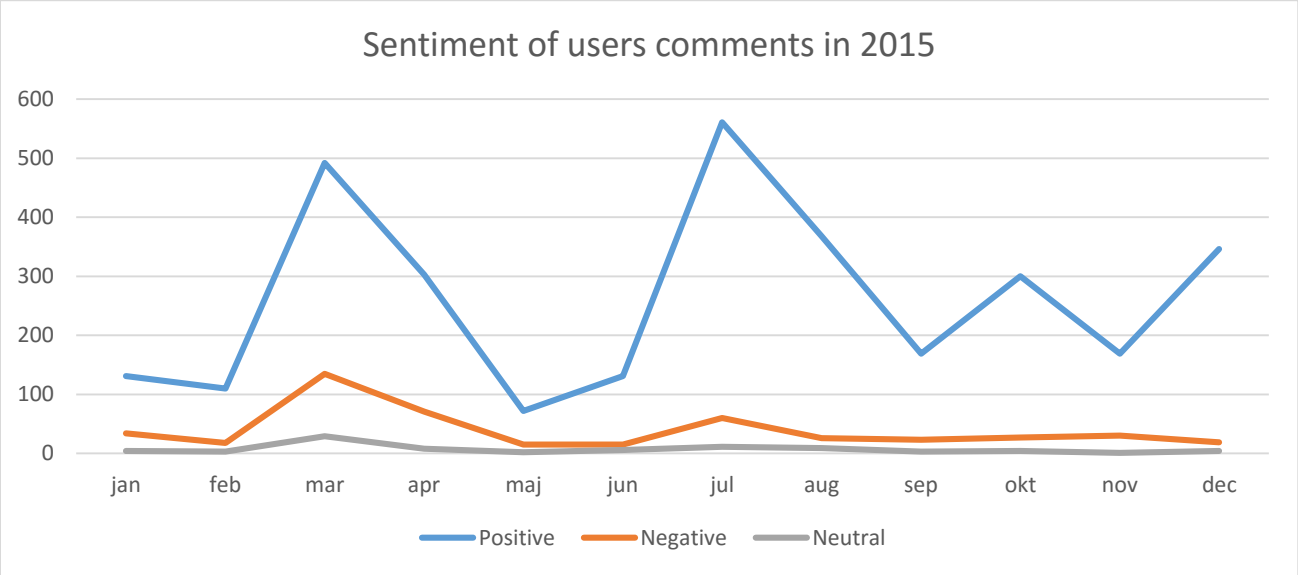


Figure 21 Sentiment analysis distribution in the year 2015.

Both the sentiment and the emotion analysis have shown that the overall tone and emotional expressions are positive and joyful in SKATs Facebook community. After the positivity and joyfulness, Fear was the second biggest emotion in all the emotion analysis. Therefore, SKAT should examine the extent of fear in their community.

Figure 22 shows a word cloud generated from all the user comments that the emotion analysis labeled as Fear. The word cloud can be used to unravel what causes the high percentage of fear in the community. The word cloud shows that the annual tax returns is much discussed, but there is also much emphasis on words like: "*mail*", "*tlf*", *"svare", "ventetid", "ringe", "logge", "kontakt"*. This indicates that a lot of the users are struggling to get in contact with SKAT. The name *"Jesper"* is

mentioned 202 times which could indicate that the director of SKAT, Jesper Rønnov, is also discussed a lot. These insights can be used to create innovative solutions(Bertot, Jaeger et al. 2012), which would bring down the amount of Fear in the community.

Figure 22 Word cloud generated out of Fear comments.

Postings

The postings parameter examines the content that the organization posts both in terms of type and substance. The parameter gives the organization an indication of how their postings are performing and how the social community accommodates these postings.

SKAT has posted a total of 227 post in this three-year period and their posts are normally guiding messages to the taxpayer. The posts are different in the way they are constructed and presented. Some of the posts have either an attached picture or video, a link, or they can be just plain text.

Figure 23 shows the distribution of all the posts made by SKAT. The figure shows that most of the posts have a photo attached and many are just plain text posts (status posts). Links are very seldom used, while sometimes a video is attached. The case introduction of SKAT revealed that SKAT has begun to create their own video material and therefore this type of post is expected to increase in the future. The usage of links is extremely low considering that SKAT has a website with many service applications and even more tax guiding instructions.

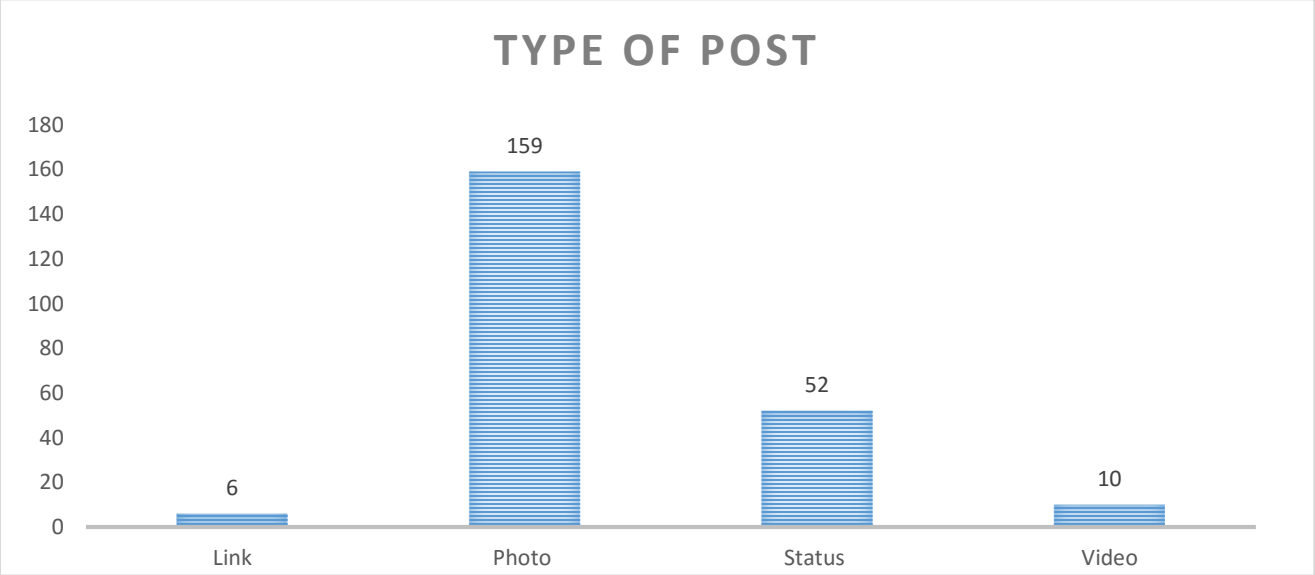


Figure 23 SKAT - Type of post

Although photos and plain text status updates are the most common, it does not necessarily mean that they are the most efficient. Figure 24 demonstrates how much attention the different posts get. What stands out is the attention that photos and videos get. It is obvious, that posts that have some visual content attached, either photo or video, get the most attention.

Photo and video posts get almost identical attention, while statuses and links do not get nearly as much. Even though video and photo are very similar, one could claim the video is a bit ahead because of the lead in generated comments. As Aichner and Jacob (2015) pointed out, it is more demanding of people to write a comment than, for example, to give a like, therefore the effect of a comment must be valued higher.

It is important to remember that the sample size on video is relatively small and should therefore be evaluated with caution, but the sample shows an interesting tendency.

Status updates with only plain text are seldom shared and get much fewer likes than the other two top performers, but are not far behind in comments. The amount of comments is relatively steady regardless of the type of post. A possible explanation could be that people are generally a bit confused when it comes to tax legislation and therefore post a lot of questions. People also tend to tag other people in posts whom they believe the post is relevant for, which also helps to increase the comments.

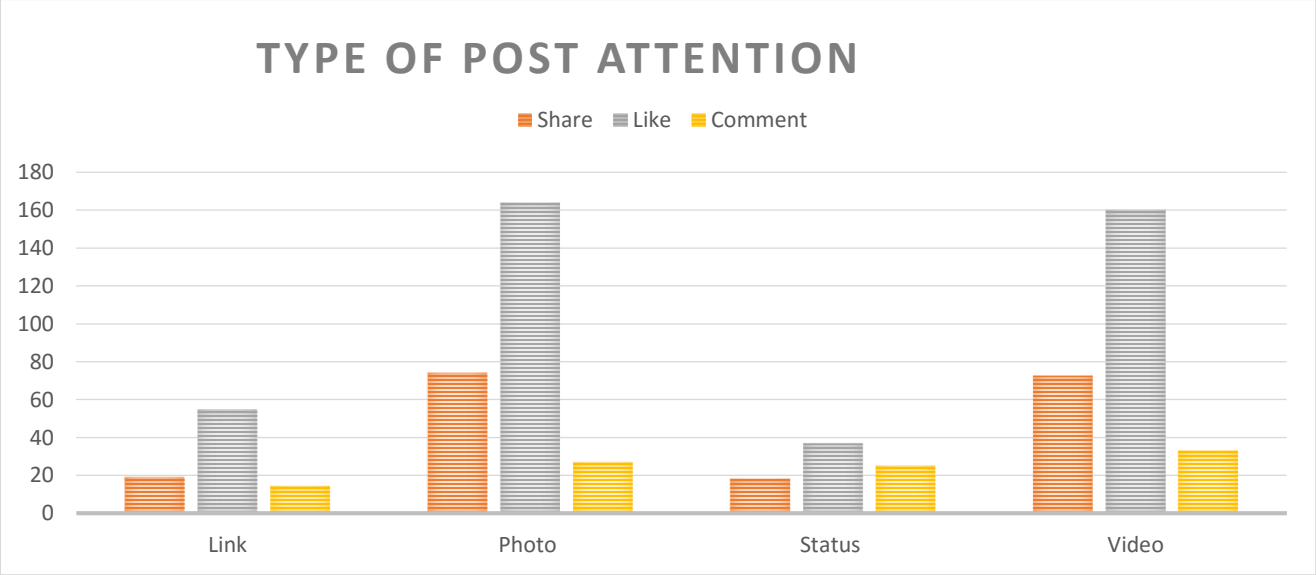


Figure 24 SKAT – Type of post attention

Based on the assertion that comments, likes and shares do not have the same value for an organization, as Aichner and Jacob (2015) postulate, a measure is calculated to better represent the true value of the likes, comments and shares. The rankings of the SMU factor are used to customize a measurement fit to calculate the value of each type of post:

$$Value = \frac{10 * Shares + 5 * Comments + Likes}{Number\ of\ type\ of\ Post}$$

The value is visualized in Figure 25 and the result reflects the same tendency in Figure 24 as video and photo generate more value than the other two categories. The posts with video content get a score of 1051 while photo content is just behind with a score of 1040. The figure concludes that videos and photos are much more efficient in raising awareness. Therefore, SKAT should continue to use the high amount of pictures that they do and speed up the production of videos in order to create as much awareness as possible.

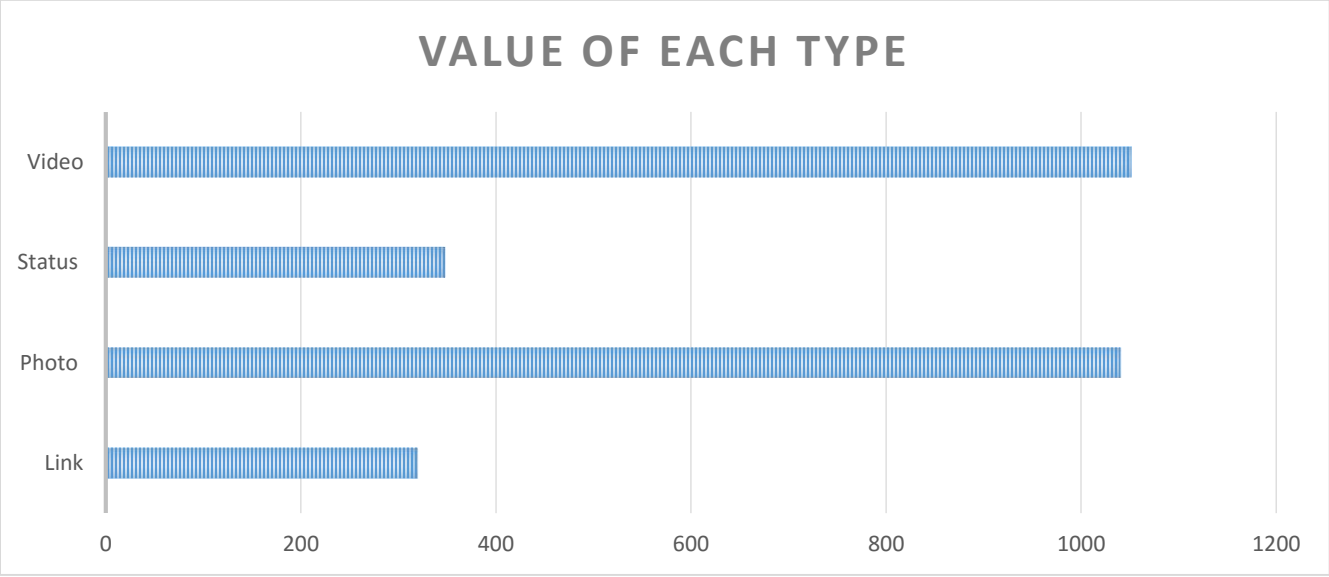


Figure 25 SKAT - Value of post

The content analysis is applied in order to get a more informative analysis of the posts posted by SKAT. The substance of the four content categories is very diverse, so concrete examples are listed below to exemplify (the posts are translated into English):

- **Alert**: These cover all the attention messages posted by SKAT. Typically, these messages contain some kind of warning to taxpayers about some fake mails or harmful videos that are circulating. For example:

  "Warning, you are not going to receive 18.500kr nor a free IPhone. A video is currently being shared here on Facebook that postulates that SKAT owes you money. A lawyer in the video will explain you how to collect your money. The video is fake and do not share it…".[2]

- **Storytelling**: These are stories that SKAT shares from their daily operations. Many of these stories are from different fields within SKAT. Most of the stories describe something positive that has happened at SKAT and some describe how SKAT makes an inspection. For example:

  *"*Miro's *ultimate test: Only 14 days into the job as a drug dog Miro stopped a can of red cabbage heading to the Faroe Islands. In the can were 260g of cannabis concealed...".*[3]

- **Information:** These are the most common posts by SKAT. These posts inform the taxpayer of deadlines to submit or apply for some of SKATs services, but mainly guide the taxpayer on how to handle their taxes. For example:

  "*Save receipt and get craftsman deduction for 2015. Yesterday, a decision was made to reintroduce the craftsman deduction for 2015…".*[4]

- **Job opportunity:** These inform people about job opportunities at SKAT. These posts list the current available job positions as SKAT. For example:

  "New job after the summer holiday? Right now there are 14 vacancies in the Ministry of Taxation…"[5]

[2] Database ID: 185399
[3] Database ID: 189072
[4] Database ID: 199372
[5] Database ID: 188715

The Storytelling category is written in an informal tone and real names of employees and drug dogs are used, which help to make the stories humble and show a human side of SKAT. Most of the Storytelling content describes positive operations at SKAT, for example (the post is translated into English):

"The customs officials in Copenhagen Airport were in for a surprise when they stopped five passengers arriving from the Middle East. The passengers had no less than 24 suitcases with them. It turned out that the suitcases contained 672 kg hookah tobacco which they tried to smuggle in… "[6]

Many of the other stories are about the drug dogs in SKATs customs. People are told stories about the training process of the dogs and what it takes to become a drug dog. Numerous narcotic findings at the airport are also shared.

Bertot, Jaeger et al. (2012) highlighted the importance of being informal and posting content which all users can easily relate to. The Storytelling category fulfils these requirements.

Figure 26 shows the distribution of all of SKATs posts within the four categories. The distribution of the types of posts is as one could have expected. One of the main purposes of SKAT being on Facebook is to communicate and guide the taxpayer and, therefore, it is no surprise that Information is the most common type of post.

On the other hand, the figure shows that SKAT makes quite a lot out of Storytelling which accounts for 25% of their posts. The other two types of content are not anything SKAT can try to promote

[6] Database ID: 187086

themselves: either there is an Alert or Job opportunity or there is not.

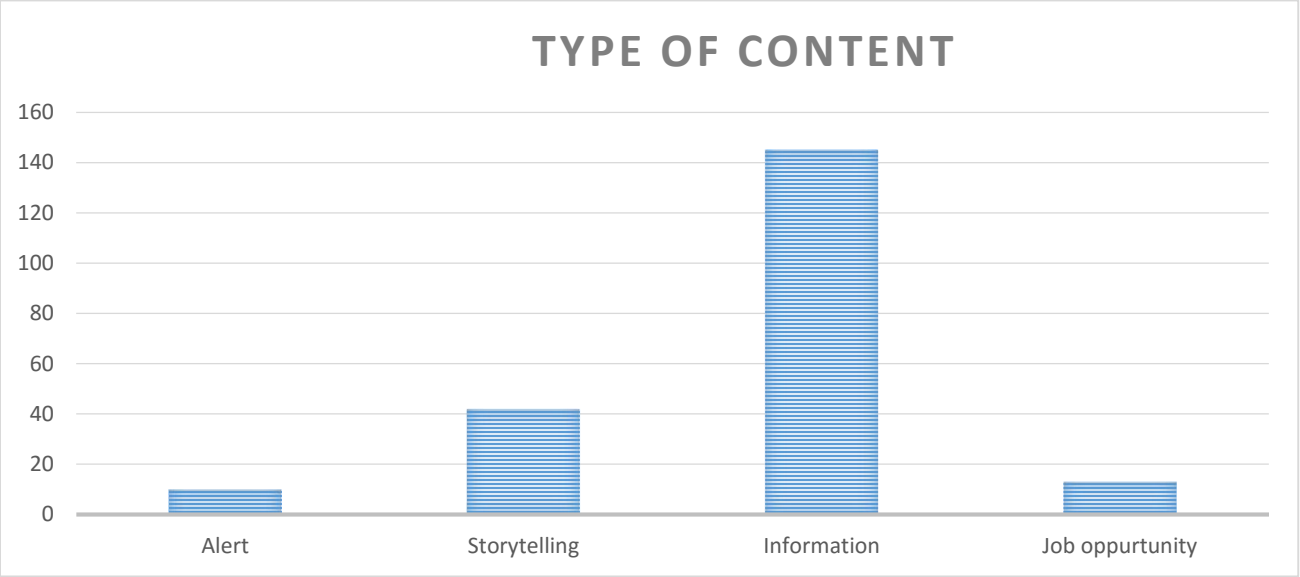


Figure 26 SKAT - Type of content

Figure 27 shows how people react to each of the four different types of posts. The reaction is reflected in the sharing-, liking-. and comment-ratio, which is calculated by dividing the number of shares, likes and comments by the number of posts in the respective group.

The graph shows that Alert and Storytelling are by far the most shared and liked type of content. A reasonable explanation for the high sharing-ratio on Alert is the nature of these messages. SKAT sends alerts messages out to warn people about a threat and people kindly spread the news by sharing in order to warn others. It also explains the low number of likes because it is more meaningful to share than to like this type of post.

On the other hand, Storytelling seems to be quite popular and has the most Likes. People obviously like to hear stories about what is happening at SKAT. People presumably also like the posts because they want to show their appreciation and applaud SKAT for doing a good job.

The most surprising result in the graph is the Information posts. About 65% of the content posted by SKAT is categorized as Information and this category is the one with the lowest overall performance.

Due to the small sample size in Alert and Job opportunity, they are not ideal for comparing, but Storytelling also outperforms Information.

It is reasonable to expect that Information posts have the most comments, but that is not the case. Information and Storytelling are equal in the number of comments which can be interpreted in two ways. Either the Information posts are so clear and helpful that people do not have any questions/comments after reading the post or SKAT is having trouble getting the taxpayer engaged and participating in the social communication. Due to the fact that the Information posts are about taxes, which people normally have a lot of questions about, the second scenario is probably more likely.

The like-ratio is also rather low on the Information posts although these kind of posts are probably not intended to generate many Likes because of their nature. The Information posts should generate more comments because people have questions or they tag other people for whom they know the post is relevant. In regards to share-ratio it is hard to say what is a fair ratio for Information and Storytelling. It is reasonable to believe that Information should be higher than Storytelling which it also is.

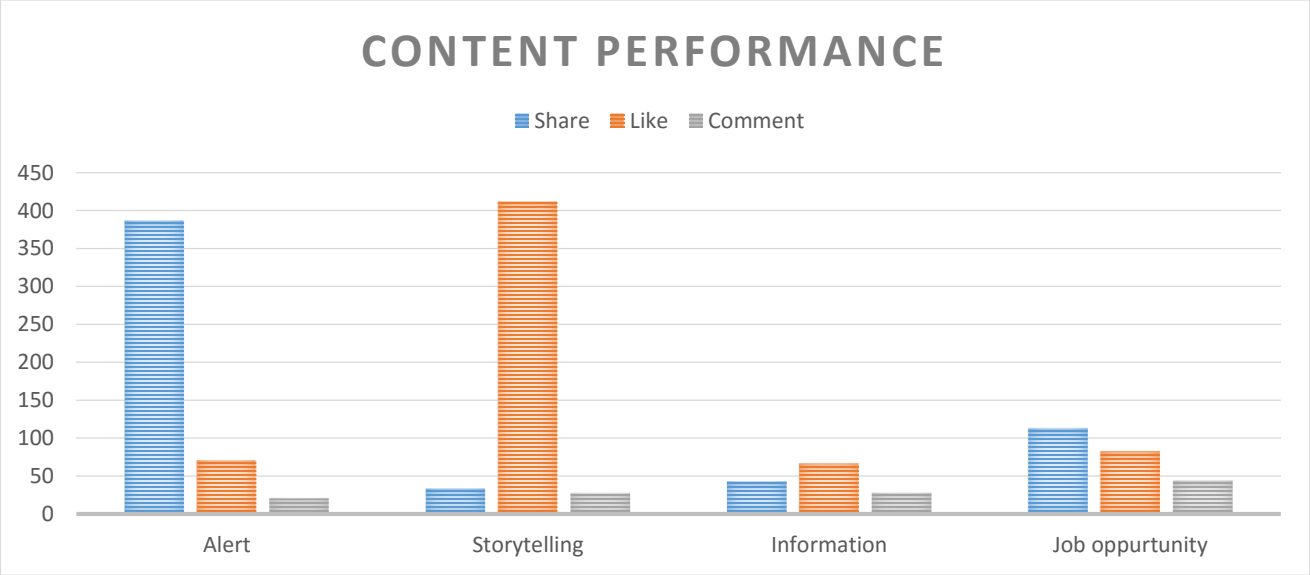


Figure 27. SKAT Content performance

Humor

A part of the research question involved examining if humor has any effect on the performance of the posts. All the posts within the four categories Alert, Storytelling, Information and Job opportunity are examined to see if the posts contained any humor.

Figure 28 shows how many posts with humor were found in each category. The Alert category has a single colored silo meaning that there was no humoristic tone in any of the posts. The other categories all contained a bit of humor. A lot of humor is used in Storytelling as almost 40% of all the posts contain some sort of humor. Information has relatively little humor, while humor accounted for over 20% in Job opportunity. Alert does not contain any humor and probably never will, due to the nature of the post, and will therefore not be analyzed further and is excluded from further analysis.

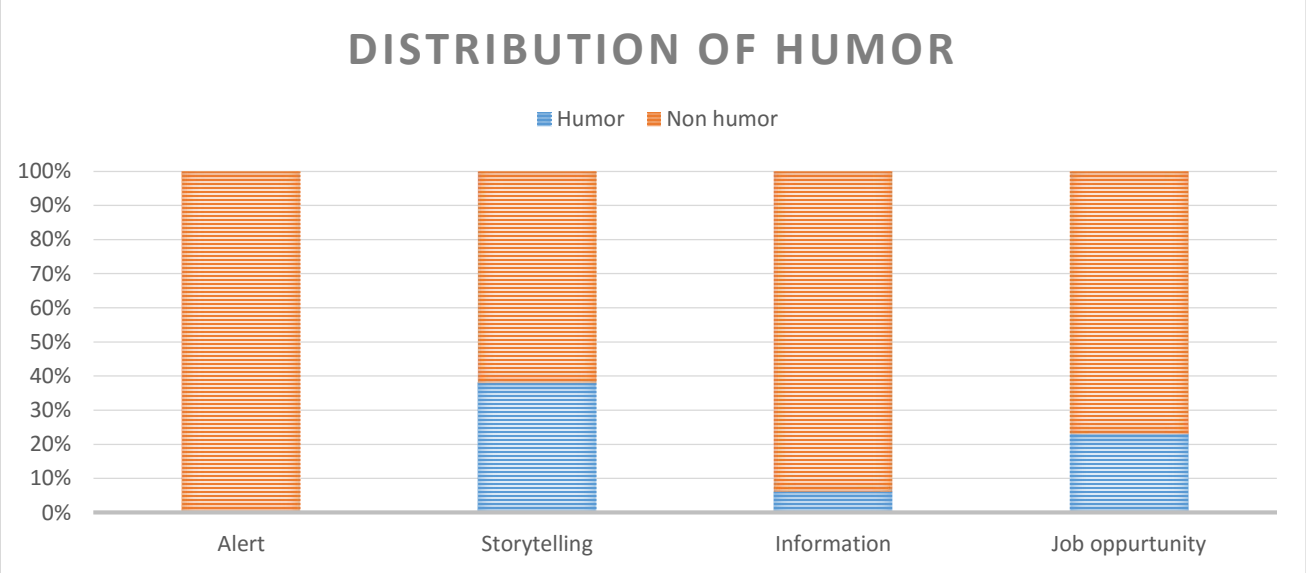


Figure 28. SKAT Distribution of humor

A statistical test is conducted in order to get a more accurate and clear overview of whether humor has any effect on the performance of the content.

All the posts from Storytelling, Information and Job opportunity are grouped into two groups: with or without humor. The test is consequently independent of categories which also increases the sample

size. In order to calculate a value for each post based on the number of likes, shares and comments the formula by Aichner and Jacob (2015) is used as inspiration. The value is calculated as:

$$Value = \frac{10 * Shares + 5 * Comments + Likes}{Number\ of\ fans}$$

Figure 29 demonstrates how the above formula is applied and how the values are prepared for the statistical test. (the full spread sheet is available in the Dropbox-folder in the Appendix)

With Humor						Without Humor				
PostDbId	Shares	Comment	Likes	Value		PostDbId	Shares	Comment	Likes	Value
185226	429	13	125	0,151474		185003	35	44	135	0,023837
185336	369	108	595	0,163139		185031	26	24	63	0,014978

Figure 29 Example of calculated values for Humor and non-Humor.

The total sample size is n= 217 where n=28 were with humor and n=189 were without humor. Due to the difference in sample size and the small representation of posts with humor, a nonparametric Mann-Whitney U test was conducted to see if there was any difference in the performance of posts with humor and those without humor. The test showed that the Null Hypothesis should be rejected due to the low significance level of 0,002.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Value is the same across categories of Group.	Independent-Samples Mann-Whitney U Test	,002	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is ,05.

Figure 30 Nonparametric Mann-Whitney U test result

Therefore, it can be concluded that humor makes a significant difference to the value of a Facebook post, if calculated by the valuations that Aichner and Jacob (2015) recommend.

Consequently, SKAT should consider using more humor in their posts as a way to create more awareness. Of course humor is not appropriate in all posts and SKAT should maintain trustworthiness and a credible image as a tax authority, but in a category like Job opportunity they probably could use more than the 20% they use today (Figure 28).

The above analysis gives SKAT an indication of how their posted content is perceived in their social community. The content analysis helped categorize the posts and reveal the performance of each group making it easier for SKAT to manage and decide on their posting strategy.

Comparative parameters

Awareness

Awareness

The Awareness comparative parameter measures and compares the social media community. It shows how the different social communities are shaped, act, and behave in terms of creating awareness.

The chosen organizations are different in both size and nature, and that is reflected in their social media acquaintances. Figure 31 shows how many fans each organization has. The organizations are horizontally sorted by the volume of people where the organization operates. Therefore, one could expect that the silos should decline from left to right, but that is not the case. Australia has expectedly the most fans as over 22 million people live in Australia, but it is more interesting that SKAT, which theoretically could have the entire nation of Denmark as a fan base, has fewer fans on Facebook than Copenhagen and only slightly more than Aalborg.

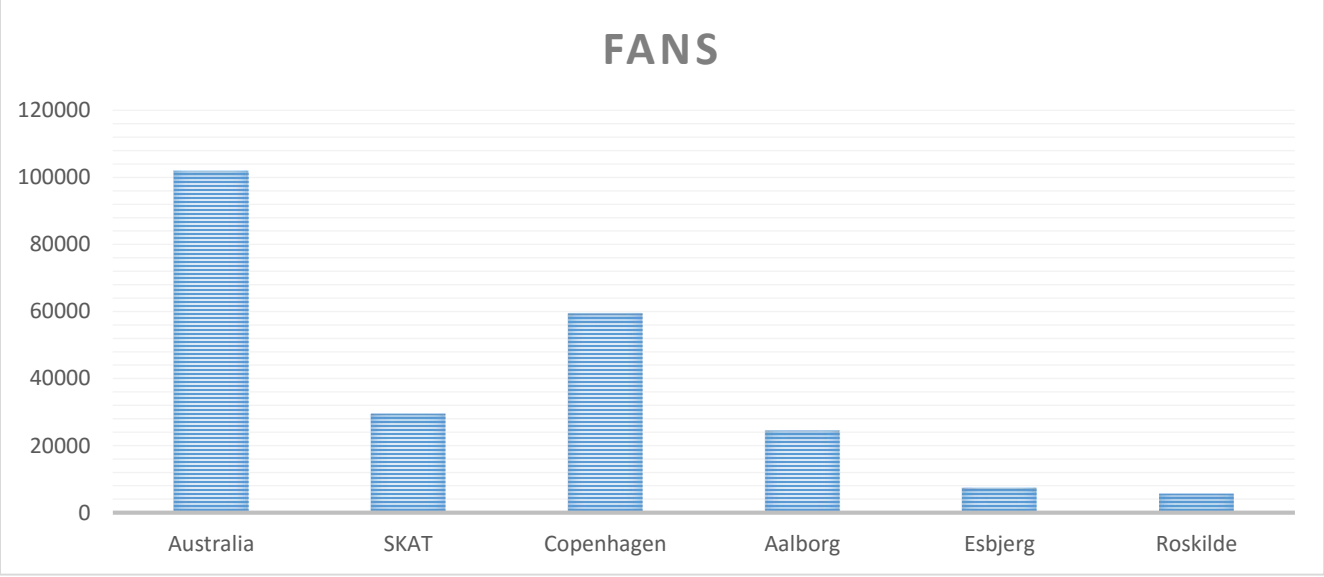


Figure 31 Facebook fans.

One explanation could be that SKAT and Australia, which are both tax authorities, have a different basis of generating likes than the other organizations. People usually have a negative attitude towards tax authorities because of the function they have in society. The Australian Tax Authority has only

approximately 100.000 likes out of a potentially 22 million, which is not very impressive and also might ratify the previous speculation.

Figure 32 shows the number of fans as a percentage of the total population where the each organization operates. The figure shows that the organizations can be grouped into three equal groups of same size.

The first group is the tax authorities, which have approximately 0,5% Facebook fans of their respective populations. The second group are Roskilde and Esbjerg, which both have approximately 6,5% of fans from their population, which must be seen as significantly higher than the previous. The third group consists of Copenhagen and Aalborg, which outperform the others and are considerably higher than the second group with respectively 10% and 11,5%.

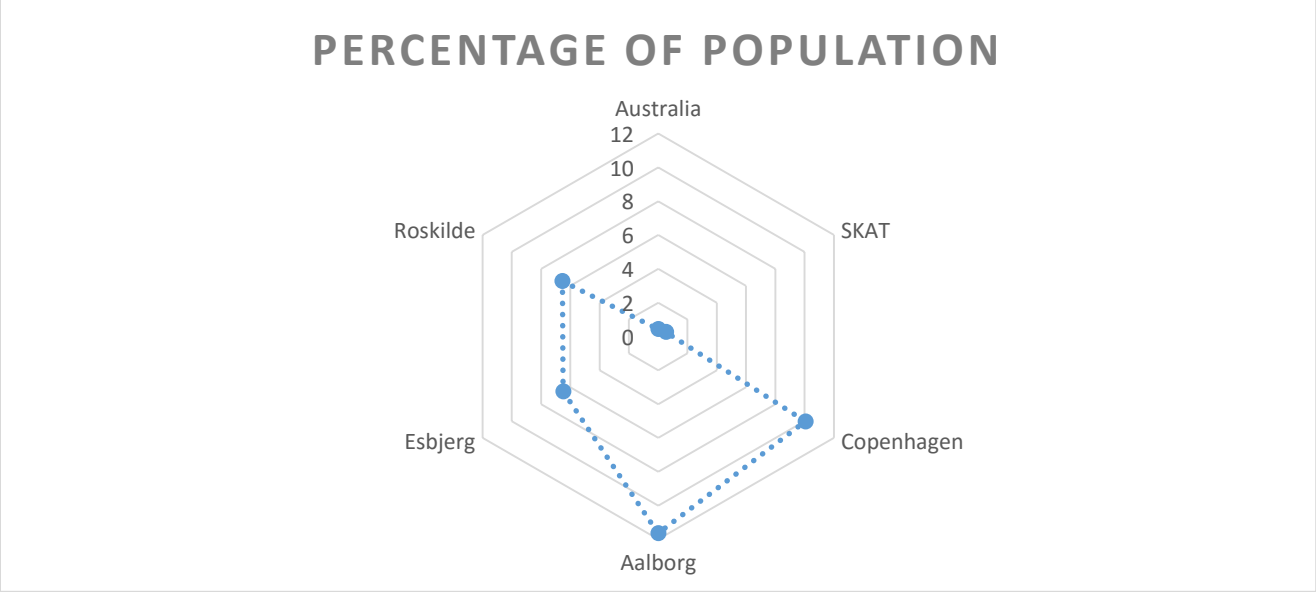


Figure 32 Percentage of Likes of population

The figure shows that the tax authorities are far behind the other organization, but this is caused by the calculation method. It is not fair to compare the national organizations with the local municipalities due to the large proportional differences in population, although researchers use these kinds of ratios in international comparisons in social media studies of national organizations(Mickoleit 2014). Therefore, the further analysis will not take into account the proportional differences of the

market where the organizations operate, but only use the respective Facebook fan base as a comparable factor.

Figure 33 shows an overview of how active the organizations have been. The organizations behave very differently when it comes to posting on their own wall. Copenhagen has made the most posts while Australia and Aalborg come in second and third place, respectively. SKAT has by far posted the fewest number of posts.

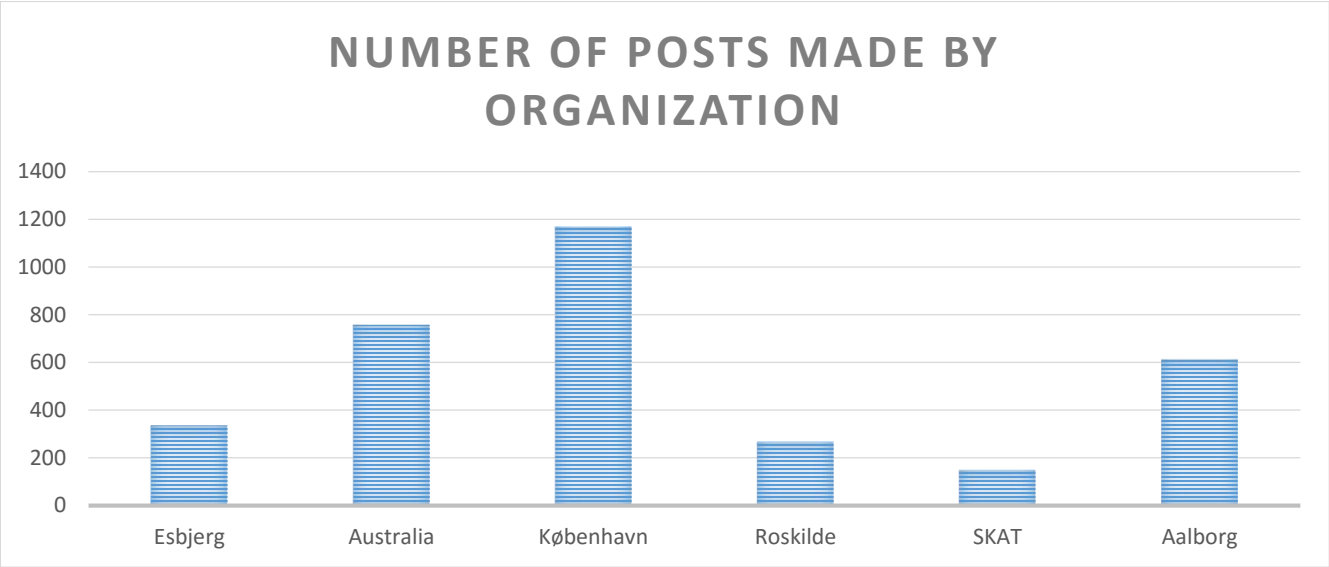


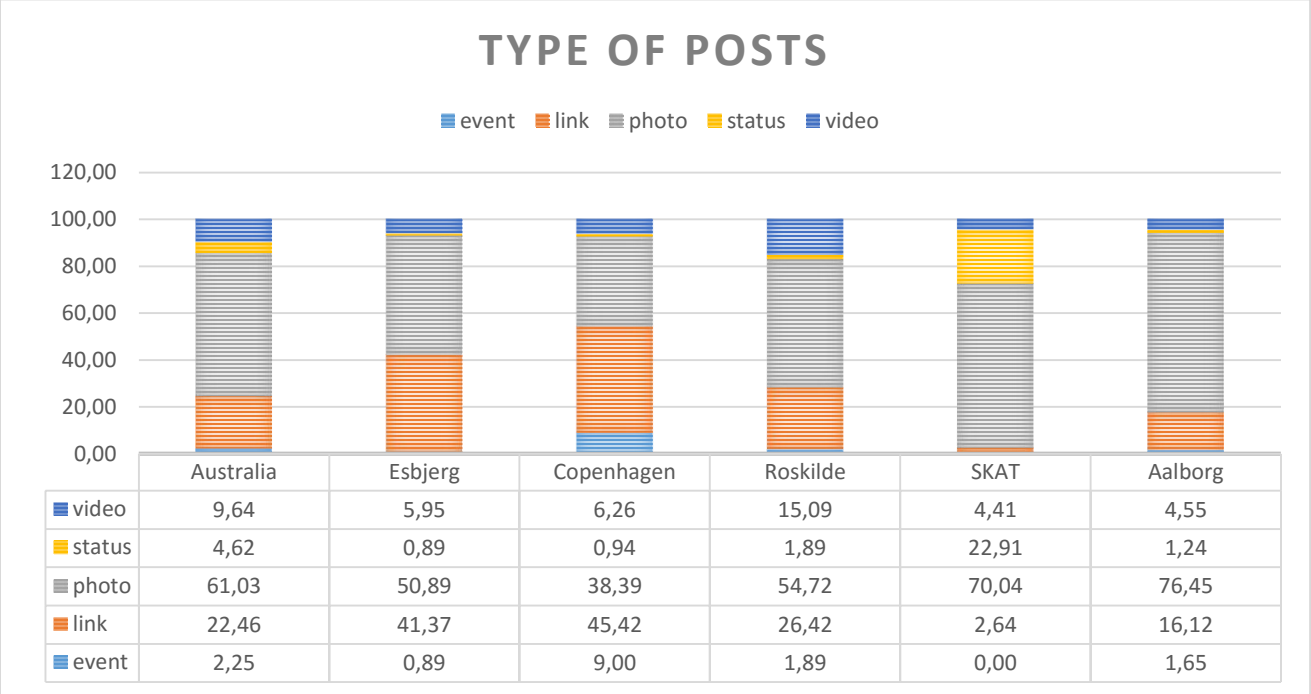
Figure 33 Number of posts that the organization has posted.

It is interesting to see that SKAT is so far behind the other organizations and especially so far behind Australia. Both organizations operate in the same industry and have the same intentions with social media. The other organizations also have the same intentions with social media, but they have a greater range of posts to post. The municipalities have the responsibility to inform people about events that are happening in the city and sharing links to these events. A capital like Copenhagen has a lot to offer its citizens and visitors in all forms of events, such as concerts, art, sports, communal events etc. All these events could generate a lot of posts if the municipality chooses to inform about everything that is happening.

Although SKAT has significantly fewer posts than the other organizations, it should not be interpreted negatively.

In order to get a more informative understanding of the postings and to compare the type of post, all the types of posts are shown in Figure 34. The figure shows how the different types of posts are represented as a percentage of the total posting for each organization. The category *status* covers posts that are made as a status update on the organization's wall without any photo, video or link attached.

There are especially two types of posts that really make SKATs silo stand out from the others. Almost 23% of SKATs posts do not have any attached visual content, which is a lot compared to the others who all are below 5%. The previous analysis of SKATs individual parameters showed that content posted by SKAT with either a video or picture attached performed much better in their Facebook community. Therefore, SKAT should definitely creating more visual content that is appropriate to go with their posts in order to create more awareness.



	Australia	Esbjerg	Copenhagen	Roskilde	SKAT	Aalborg
video	9,64	5,95	6,26	15,09	4,41	4,55
status	4,62	0,89	0,94	1,89	22,91	1,24
photo	61,03	50,89	38,39	54,72	70,04	76,45
link	22,46	41,37	45,42	26,42	2,64	16,12
event	2,25	0,89	9,00	1,89	0,00	1,65

Figure 34 Type of post posted by the organization

Another surprising number is the usage of links in SKATs posts. SKAT is far behind the others, only 2,64% of their posts containing links, while the others range from 22% to 45%. The presentation of the other organizations' social media standings indicated that many used social media to drive traffic to their website and other communication channels. SKAT should certainly try to refer more to their website, which would result in fewer inquiries from their taxpayers as well as cost reduction, which was some of SKATs goals for being on social media.

Figure 35 shows how many likes and shares each organization gets per fan. The chart shows that SKAT is far behind the other Danish organization in terms of likes. The problematic aspect is that the other municipalities have a wider range of posts, as mentioned earlier, which makes them more favorable to generate more likes.

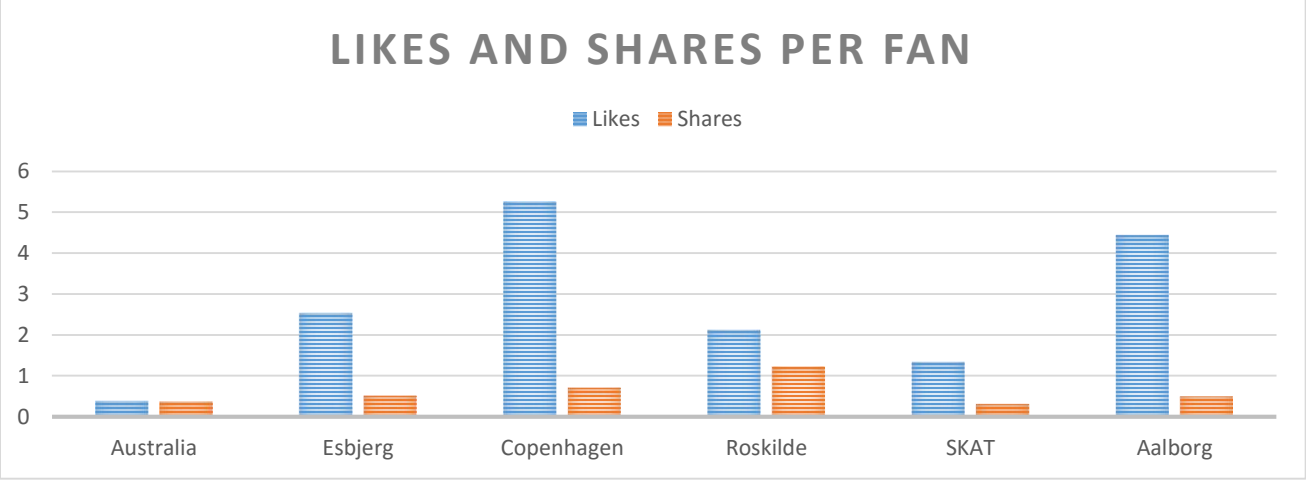


Figure 35 Likes and shares per fan

Although SKAT has only made 150 posts compared to Australia, which has posted 757 posts (Figure 33), they are able to generate more likes than Australia. Figure 34 shows that Australia posts 10% fewer pictures than SKAT, which could explain the difference and again confirm that visual content performs better.

The figure also shows that Roskilde has only 268 postings (Figure 33), but significantly more shares and likes than SKAT. Therefore, SKAT should consider examining the posting strategy of Roskilde to improve their ability to create awareness.

Engagement

Engagement

The engagement comparative parameter measures and compares the engagement and participation of the users in the social media community. The measures are reflected by the actions of the users and the organizations' actions.

Figure 36 shows all the posts that are posted on the organizations' walls in 2015. The graph is a representation of the engagement of the citizens. The posts depict the level of inquiries from the citizens in the form of questions posted on the organization's wall.

The chart shows that SKAT gets a lot of posts/questions on their wall compared to the other organizations. SKAT gets twice as many posts as Australia, which must be seen as a triumph for SKAT. Australia has a fan base almost five times larger than SKATs, which really points out how good the result is for SKAT. Therefore, the figure shows that the users in SKATs community are willing to engage and use Facebook as a communication channel. Consequently, the participation can help reduce the burden on customer service and optimize the process (Ajmera, Ahn et al. 2013).

Figure 36 Total post on organization wall.

It should be pointed out, that if an organization has a Facebook page with 50.000 fans, that does not mean that the organization only reaches those people. The fans are only those people who have liked the page and thereafter get notified if the organization posts something. Figure 37 shows how many unique actors have been active in 2015 on the organizations' walls as a percentage of the fan base. By being active they have either commented, liked, shared or posted something on the organization's wall. The figure shows that most of the organizations have many more unique users then their fan base counts. People who have not liked the organization's Facebook page turn to the page with their errands and thus the number is bigger.

The figure shows that SKAT reaches about 180% of their fan base which is not that impressive compared to the Danish municipalities. Copenhagen reaches more than five times their own fan base and Aalborg just below five times theirs. SKAT is thereby the worst Danish organization in this regard. Australia does not even reach more than half their own fan base, which could indicate that there are some cultural differences about the users' behavior(Pew Research Center 2014). Consequently, SKAT should definitely consider creating more awareness around their Facebook site to increase their reach in terms of unique users.

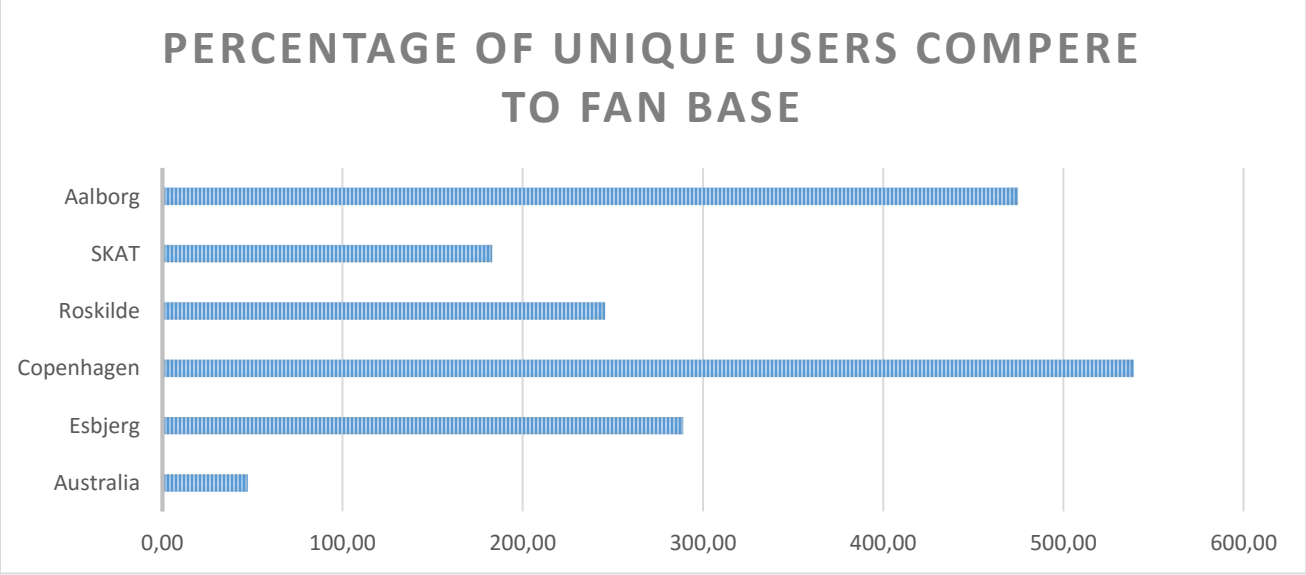


Figure 37 Percentage of unique actors compared to fan base

Figure 38 shows how many unique users are talking about the organizations. The measurement is calculated as a percentage of the fan base for each organization. The figure shows that 16,91% of SKATs fan base is talking about the organization which is much more compared to the other organizations. As the measure only includes one week, the measure can have a high variance and should therefore be interpreted with caution. Nevertheless, the measure indicates that SKAT has an engaging and participatory Facebook community.

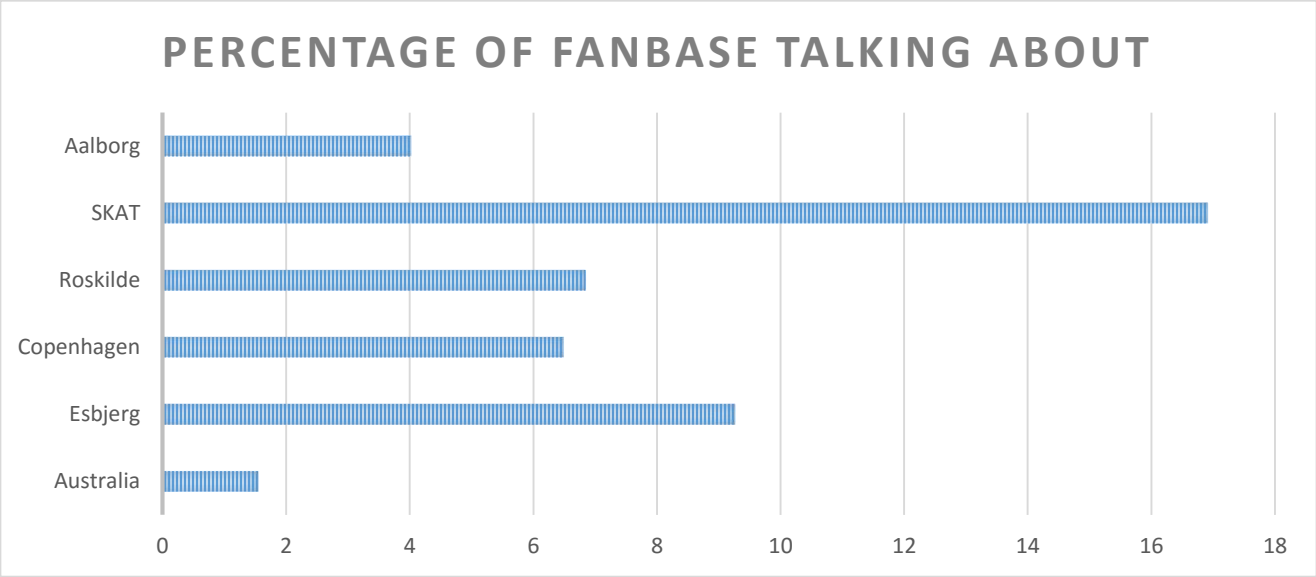


Figure 38 Percentage of fan base talking about the organization in week 16 in 2016.

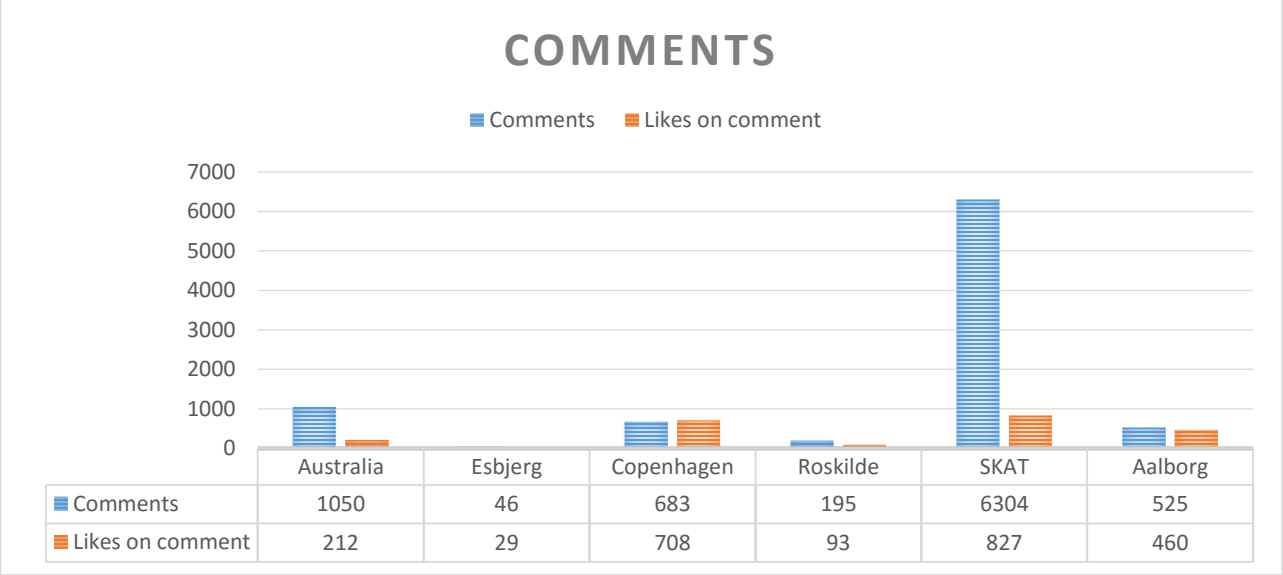
Interaction

Interaction

The comparative interaction parameter measures the interaction between the organizations and the users of their Facebook community. The measures cover the responsivity and activity of the dialog between the organizations and their users.

Figure 39 shows how well the organizations respond to their respective social communities. The number of likes on the comments that the organization has made is considered to be an indicator for how satisfied the users are with the response. Copenhagen and Aalborg are by far out performing the others by almost having a 1 to 1 ratio. SKAT is far behind with approximately 6 to 1 ratio and Australia has a similar ratio.

The result must be evaluated with caution due to the comments. When a user posts a question the question can create a dialog back and forth resulting in many comments to a single question. SKAT and Australia are both tax organizations which people tend to have a lot of questions about. Therefore, it is reasonable to think that most of these dialogs generate more comments per like and consequently, Australia's and SKAT's silos are so unbalanced in the figure below.



	Australia	Esbjerg	Copenhagen	Roskilde	SKAT	Aalborg
Comments	1050	46	683	195	6304	525
Likes on comment	212	29	708	93	827	460

Figure 39 Comments made and likes on comments.

Figure 40 shows the response time from when a comment is posted on the respective organization's wall until the organization has answered. The time is calculated in the opening hours from 08.00 till 17.00 in all workdays of the week. All the posts that have been posted outside opening hours have been reset to 08.00 the next workday. All the posts that have been answered within a five-day period are included. Australia is not included in the figure due to the time difference and posting activity which created technical problems. Australia responds to the questions posted on their wall in every hour of the day and in weekends. This activity did not fit the premises of the measurement set up for the Danish organizations, and is therefore not included.

The chart shows that SKAT has the lowest response time with just under three hours. Aalborg has the second fastest response time while the other Danish municipalities are far behind. Although there is a big difference in response time, all the organization answered on average within eight hours.

By having a fast response time SKAT creates more value to their Facebook community. The sooner a question is answered the sooner the information is visible to the public, which can result in fewer inquiries and thereby indirect savings (Picazo-Vela, Gutierrez-Martinez et al. 2011).

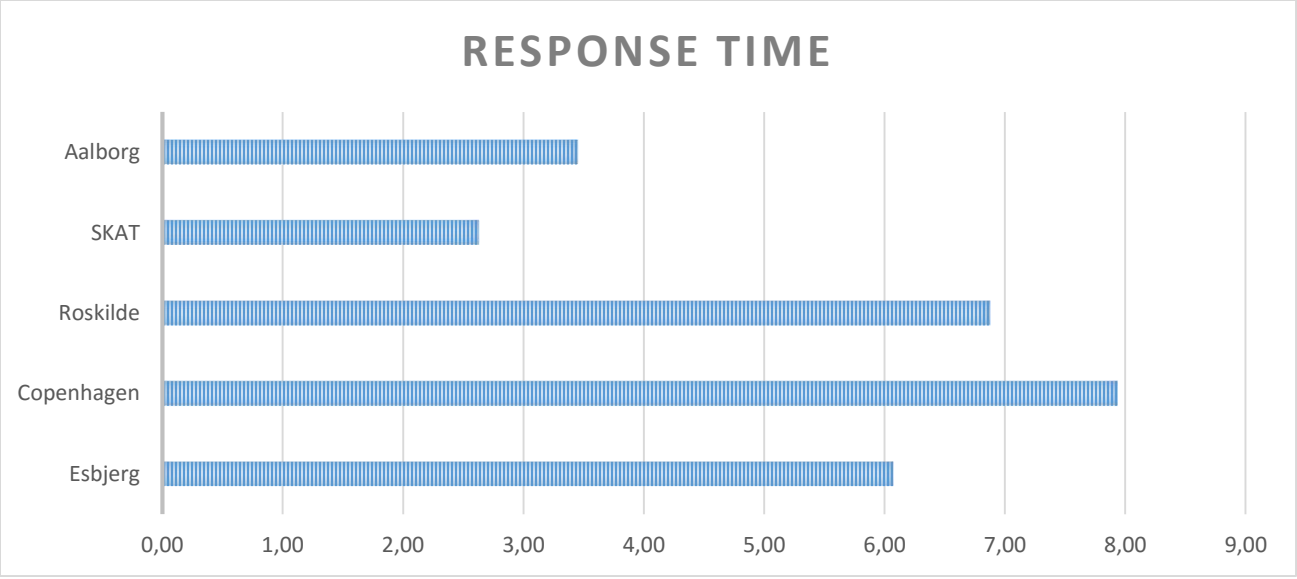


Figure 40 Response time

A summary of findings and takeaways for SKAT

The individual parameters showed that SKATs Facebook community is for the most part very positive both in terms of asking questions and commenting. The emotions of the users are mostly joyful although there is a bit of fear lurking. The word cloud presented an approach on how to minimize the fear by revealing the topics concerning fear, which would make the community even healthier. The analysis of the content exposed that content which had an attached visual component performed much better. Additionally, humor significantly increased the awareness value. Furthermore, the storytelling efforts by SKAT are very popular in their community and created a lot of awareness.

The comparative parameters showed that SKAT has a less aggressive posting strategy than the other organizations, but nevertheless SKAT is generating a fair amount of likes. However, their content is not shared as much as the other Danish organizations. SKAT posts significantly more plain text status update than the others, and these do not create as much awareness. SKAT is referring alarmingly little to their own website compared to the other organizations, which would take a lot of pressure of the other contact channels.

The engagement level of SKATs Facebook community is very healthy compared to the other organizations. The interaction level is much higher both in terms of questions asked and questions answered. SKAT is also significantly better at answering their community with the lowest response time, but are lagging behind with likes on their answers. SKAT is also far ahead of the others concerning the engagement factor *people talking about*. Despite the high participation rate in SKATs Facebook community, SKAT is lagging when it comes to unique users. SKAT is not reaching people with the same multiplication factors as the other organizations.

These findings can help SKAT improve their social presence on Facebook. They now know how the users of their community react to the different types of posts they post. The initiative of sharing stories from SKATs daily operations can now be concluded to be a success as the analysis showed how well these posts are perceived. Their experiment with using humor in some of their post can now also be concluded as a success based on the posts' ability to create awareness.

Furthermore, SKAT is now aware of the sentimental and emotional state of their Facebook community and can react to the fear that is present in the community. The fear seems to come from the difficulties people have trying to get in contact with SKAT. Therefore, SKAT can respond to these findings by creating initiatives to try to bring down the fear.

The comparison with the other organization gives SKAT a concrete measure of where they stand compared to other organizations using Facebook as a communication channel. These findings can be used for setting acceptable performance levels for SKATs Facebook activities. As mentioned earlier, SKAT is considering using KPIs for their social media activities as they do in other parts of the organization. By having concrete measurements of how other organizations are performing, they can better assess their own performance. For example, the response time showed that SKAT is performing much better than the other organizations. Hereby, can SKAT conclude that a reasonable KPI would be to have a response time under three hours as all the other organizations are far above that.

The type of posts posted by the other organizations can also be inspirational for SKAT. The analysis shows that SKAT refers significantly less to their own webpage and posts many more plain text posts than the others. This kind of knowledge can be an eye-opener for SKAT which most likely is unaware of these occurrences. Knowledge like this can give SKAT grounds for changing some of their social media procedures and posting strategy.

Conclusion

The aim of this thesis was to examine how administrative organizations can measure and compare their social presence on Facebook, and to inspect if Facebook posts perform differently depending on the content and substance. As the literature on social media mostly emphasizes how organizations can benefit from social media and advises on how social media should be implemented, it was necessary to develop a framework that could help answer the research question. The literature review pointed out important aspects of social media and the perceived benefits, which helped confine what parameters to include in the framework.

The framework offers a practical approach to get a profound understanding of an organization's social media position and community. By using SKAT as an example, the framework demonstrated how an organization can measure and compare their presence on Facebook.

The framework has clarified how SKAT can alter their posting strategy based on analysis of their content performance in their Facebook community. The comparative parameters have shown how SKAT performs compared to other similar administrative organizations. These insights can further act as the foundation and reasoning for the future development of sufficient KPIs.

The framework contributes to the social media literature by offering a more practical and guiding approach to which elements to measure and compare. The framework should be expanded to embrace multiple social media platforms and not only include Facebook. Aichner and Jacobs (2015) have defined how to value all the different social media elements of YouTube, Twitter, LinkedIn, and Google+, which could be used to further develop a more comprehensive social media metric. A framework like this would give organizations a more manageable approach to social media measurements and could result in more organizations engaging in monitoring and measuring their social presence on social media.

References

AALBORG KOMMUNE, 2016-last update, Borger - Aalborg Kommune. Available: http://referater.aalborgkommune.dk/Pdf.aspx?pdfnavn=17156535.PDF&type=bilag&id=11351 [5/24/2016, 2016].

AICHNER, T. and JACOB, F., 2015. Measuring the degree of corporate social media use. *International Journal of Market Research,* **57**(2), pp. 257-275.

AJMERA, J., AHN, H., NAGARAJAN, M., VERMA, A., CONTRACTOR, D., DILL, S. and DENESUK, M., 2013. A crm system for social media: challenges and experiences, *Proceedings of the 22nd international conference on World Wide Web* 2013, International World Wide Web Conferences Steering Committee, pp. 49-58.

ASAD, H.A. and ALHADID, A.Y., 2014. The Impact of Social Media Marketing on Brand Equity: An Empirical Study on Mobile Service Providers in Jordan. *Review of Integrative Business and Economics Research,* **3**(1), pp. 315.

AUSTRALIAN GOVERNMENT, 2016-last update. Available: https://www.ato.gov.au/About-ATO/Access,-accountability-and-reporting/Informing-the-community/Our-effectiveness/Fostering-willing-participation/Social-media/ [4/1/2016, 2016].

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

BONSON, E., TORRES, L., ROYO, S. and FLORES, F., 2012. Local e-government 2.0: Social media and corporate transparency in municipalities. *Government information quarterly,* **29**(2), pp. 123-132.

DANMARKS STATISTIK, 2016-last update, Folketal 1. januar efter byområde, alder og køn - Statistikbanken - data og tal. Available:

http://www.statistikbanken.dk/statbank5a/selectvarval/define.asp?PLanguage=0&MainTable=BY1&TabStrip=Select [5/25/2016, 2016].

DARWELL and BRITTANY, 2012-last update, 'People Talking About This' defined | SocialTimes. Available: http://www.adweek.com/socialtimes/people-talking-about-this-defined/273447 [6/27/2016, 2016].

ELO, S., KAARIAINEN, M., KANSTE, O., POLKKI, T., UTRIAINEN, K. and KYNGAS, H., 2014. *Qualitative content analysis: A focus on trustworthiness (pp. 1--10).* SAGE Open.

ELO, S. and KYNGAS, H., 2008. The qualitative content analysis process. *Journal of advanced nursing,* **62**(1), pp. 107-115.

ESBJERG KOMMUNE, 2016-last update, Strategier og visioner. Available: http://www.esbjergkommune.dk/om-kommunen/strategier-og-visioner.aspx [6/16/2016, 2016].

FORMAN, J. and DAMSCHRODER, L., 2008. Qualitative content analysis. *Empirical Research for Bioethics: A Primer.Oxford, UK: Elsevier Publishing,* , pp. 39-62.

HANNA, R., ROHM, A. and CRITTENDEN, V.L., 2011. We're all connected: The power of the social media ecosystem. *Business horizons,* **54**(3), pp. 265-273.

HOFFMAN, D.L. and FODOR, M., 2010. Can you measure the ROI of your social media marketing? *MIT Sloan Management Review,* **52**(1), pp. 41.

HSIEH, H. and SHANNON, S.E., 2005. Three approaches to qualitative content analysis. *Qualitative health research,* **15**(9), pp. 1277-1288.

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

KIETZMANN, J.H., HERMKENS, K., MCCARTHY, I.P. and SILVESTRE, B.S., 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Business horizons,* **54**(3), pp. 241-251.

KØBENHAVNS KOMMUNE, 2016-last update, Sociale medier. Available: http://www.kk.dk/artikel/sociale-medier [5/25/2016, 2016].

KUMAR, A., BEZAWADA, R., RISHIKA, R., JANAKIRAMAN, R. and KANNAN, P., 2016. From Social to Sale: The Effects of Firm-Generated Content in Social Media on Customer Behavior. *Journal of Marketing,* **80**(1), pp. 7-25.

MICKOLEIT, A., 2014. Social Media Use by Governments. **No. 26**(OECD Publishing),.

OECD, 2011, 2011-last update, Social Media Technologies and Tax Administration. Available: https://www.oecd.org/tax/administration/48870427.pdf [6/15/2016, 2016].

PETERS, K., CHEN, Y., KAPLAN, A.M., OGNIBENI, B. and PAUWELS, K., 2013. Social media metrics—A framework and guidelines for managing social media. *Journal of Interactive Marketing,* **27**(4), pp. 281-298.

PEW RESEARCH CENTER, 2014, 2014-last update, Emerging Nations Embrace Internet, Mobile Technology. Available: http://www.pewglobal.org/2014/02/13/emerging-nations-embrace-internet-mobile-technology/ [6/15/2016, 2016].

PICAZO-VELA, S., GUTIERREZ-MARTINEZ, I. and LUNA-REYES, L.F., 2011. Social Media in the Public Sector: Perceived Benefits, Costs and Strategic Alternatives. , pp. 198-203.

QUALMAN, E., 2011. How social media transforms the way we live and do business. *Ipswich, MA: Business Book Summaries,* .

ROSKILDE KOMMUNE, 2016-last update, Social media strategi 2013 Roskilde Kommune. Available: https://www.google.dk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwiK4fae-cjMAhVlYpoKHX_OBZ0QFgggMAA&url=https%3A%2F%2Fdigitaliser.dk%2Fresource%2F2530757%2Fartefact%2FRuneSt%25C3%25A6hr_Roskilde_SocialMediaStrategi_2013.pdf&usg=AFQjCNFWqZRhr8HAT8X-IBKxn0wneJJoUQ&cad=rja [8/5/2016, 2013].

SAUNDERS, M.N., 2011. *Research methods for business students, 5/e.* Pearson Education India.

SHEN, B. and BISSELL, K., 2013. Social media, social me: A content analysis of beauty companies' use of facebook in marketing and branding. *Journal of Promotion Management,* **19**(5), pp. 629-651.

SKAT, 2016-last update, SKAT på sociale medier. Available: http://www.skat.dk/skat.aspx?oID=4650 [5/7/2016, 2016].

STATISTA, 2016-last update, • Number of Facebook users worldwide 2008-2016 | Statistic. Available: http://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/ [6/7/2016, 2016].

TIM O'REILLY, 2005-last update, What Is Web 2.0 - O'Reilly Media. Available: http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html [6/21/2016, 2016].

VATRAPU, R., 2013. Understanding social business. *Emerging Dimensions of Technology Management.* Springer, pp. 147-158.

WEINBERG, B.D. and PEHLIVAN, E., 2011. Social spending: Managing the social media mix. *Business horizons,* **54**(3), pp. 275-282.

Bradley, P. (2010). Be where the conversations are: The critical importance of Social Media.

Appendix

All the data used in this thesis is available at:

https://www.dropbox.com/sh/zlq9eq9vvoddrmd/AAC9lZ31cKaIUprnAP2GVcxta?dl=0

The link gives access to:

- Sentiment analysis
- Emotion analysis
- Content analysis
- Spreadsheets with calculations and graphs
- Sorting list (used for filtering word cloud for conjunctions)
- Created icons and figures
- Facebook data
- Statistical test

Appendix 2 Interview – SKAT

A summary of the interview with the social media editor at SKAT, Dorthe Palm.

Do you have any social media strategy at SKAT?

"Well, we do not have any official social media strategy that is written down and communicated through the organization. Our director, Jesper Rønnov, values social media a lot and therefore social media has become an important part of SKATs operations. He is very open-minded regarding social media and we get a lot of support from him when it comes to social media initiatives.

We have a social media team that consists of people that are ready and qualified to answer all the questions the taxpayer may have. We have formulated clear polices on how our employees shall respond and what they can respond to."

What is the overall goal with being on social media?

"We believe that we need to be where our consumers are. Most of the Danish citizens are active on social media and therefore we can solve a lot of their problems online. We also reach a lot more people with relatively fewer resources. Our phone lines are very busy and we are working on trying to cut down the waiting time. Social media can help take a bit of the pressure off the phone lines. But that is only one aspect of it. We also want to be up-to-date with the modern online society. Our director has a lot of focus on social media and he believes it is part of our duty to be present on social media."

I know that SKAT has KPI for every division, what about SKAT's social media? Do you have any KPI level you must meet each month or how is it?

"No, we do not have any specific goals or levels we need to reach each month. We have information from our Facebook page, where we can see our reach and a couple of other parameters. We have all that, but we do not have any specific goals."

Have you ever considered creating some KPIs?

"Yes, we have, but we find it hard to assess what should be a sufficient KPI. Therefore, we have not created any yet. But that is probably something we need to look into in the future."

What about applying sentiment analysis on the tax payers' comments? Or use word clouds to get an idea what the tax payers are saying? Considered any of these options?

"Yeah, those are all on our to-do-list. We have not tried any of those things yet, but that is definitely something we need to look in to in the future. We would also like to do analysis on some of the content that we post. Many of our posts are technical tax related subjects and others are less technical and it could be interesting to see if they perform differently."

Can you please elaborate on that?

"Some of our material that we post has pictures attached to the post and other has videos and some are just text. It would be interesting to see if these posts perform differently depending on the type of post. Our posts can also be categorized into a couple of types like heavy tax related or less tax related. We also try to give people an idea what we are doing in SKAT by sharing some of our stories in SKAT. We also try to be humoristic in some of our posts and it would be very interesting to see if the posts are received differently depending on the content."

What about benchmarking against others in the industry? Ever considered that?

"No not really."

But wouldn't that be interesting to see how you perform compare to similar organization like SKAT?

"First of all it would require that we had the same measurements as other organizations and we do not have that, but it could be interesting though. If we could see that some other organization was outperforming us we could find out what they were doing better than us and learn from them. So, yeah, that could definitely be interesting."

Thank you for your time.