MASTER THESIS IN INFORMATION SCIENCE

VIBI

Supporting journalists to manage and verify visual user-generated content

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Abstract

With the emergence of social media, user-generated content (UGC) has become an increasingly part of the journalistic workday. Though it can be viewed as an enrichment for the media and journalism, it also brings new challenges such as the time-consuming and important tasks of finding, evaluating and verifying content to ensure the content is newsworthy and of journalistic quality before presenting it as news.

This study reports the results of an empirical study of how newsrooms work with visual user-generated content and their practices, as a part of the requirement and content gathering for a prototype to support novice journalist with managing and verifying visual user-generated content. Followed by an evaluation of the prototype's usability and the users experience of the design. The study is finalized with a reflection of the implications of the findings for when designing a tool to support journalists dealing with visual UGC.

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Chapter 1 Introduction

User-generated content (UGC) has become a well-known term since blogs, wikis and social media sites changed the way information is provided and gathered. News organizations no longer have monopoly over news stories and what is published where, and as news content is also being produced by non-professionals, it is not uncommon for breaking news to first be mentioned in social media.

Though anyone can publish content and present it as news, not everyone can be a journalist (Singer, 2010). Amateurs simply lack the expertise and training that professional journalists have (Keen, 2007), and the quality of user contributions are therefore of concern to news media (Paulussen & Ugille, 2008).

The news desks are subject to change (Tolmie et al., 2017), and while managing UGC and interacting with users are becoming a larger part of the journalistic work day (Paulussen & Ugille, 2008), the newsrooms employees lack training in finding, verifying and clearing rights of UGC (Wardle, Dubberley, & Brown, 2014). Thus, in addition to creating new opportunities and challenges for news organizations, UGC also lead to a new journalistic need: "Journalists need tools that support them in the verification process" (Diplaris et al., 2012, p. 1243).

"Fake news" has been a much-discussed topic since the US presidential election in 2016 and has put the integrity and credibility of journalists on trial, making it extra important for news media to ensure they produce high-quality, reliable news.

In late April 2017, NRK Brennpunkt aired the documentary "Lykkelandet". The documentary presented pictures as if they were affiliated with begging crimes in Bergen, when in fact they were old pictures and not even from Norway. The creators were not aware of this, before it was reported by social media users. The editor of Brennpunkt, Odd Isungset, disclose to VG (Ighanian, 2017) that they found the pictures with the traffickers and simply took if for 'good value' and finish off with stating: "We should have done a better photo check".

ViSmedia is established as a four-year (2015-2019) interdisciplinary research project that investigates how adoption and adaption of visual surveillance technologies in news media can be optimized to integrate societal responsibility in quality journalism. The ViSmedia

research project builds on the Responsible Research and Innovation (RRI) framework and is funded by the Norwegian Research Council's program SAMANSVAR. (ViSmedia, 2018)

The study presented here is a part of ViSmedia and focuses on developing a tool to support novice journalist to manage and verify visual user-generated content (UGC). This thesis explores how newsrooms work with visual UGC and some of the challenges related to this. With the aim to support the early-career journalists stepping into the at times high-paced newsrooms, being welcomed by a learning-by-doing culture, VIBI was created.

This study is placed within the research field of HCI, inspired by the value-oriented theory of value sensitive design and the content orientation of a media design.

1.1. Research Question and Thesis Aim

The main research question that framed this research is

How to design a tool supporting novice journalists to manage and verify visual user-generated content?

While "manage" is a broad term for the journalistic tasks related to UGC, covering all from finding, evaluating, verifying, contacting contributors to clearing rights of UGC, verifying visual UGC is a specific journalistic process of authenticating image material from users.

In order to answer this research question, it was necessary to find out what training journalists currently receive on how to deal with visual UGC and to understand how various newsrooms work with, and evaluate, visual UGC. It was also explored what tools the journalists want and what tools they need, aiming to establish what to design to support the early-career journalists. This was attempted to get answers to through interviewing three domain experts from three different Norwegian newspapers ranging from local to national in news coverage.

In addition, a literature review was conducted to further research what the right thing to support the journalists would be, and to find out what to consider when designing for journalists and the task of verifying user-generated content.

Then, a research through design-process was used as a framework to develop a prototype, VIBI, which aims to assist novice journalists with the difficult tasks related to visual user-generated content. The evaluation of VIBI investigates the usability and user experience of VIBI and aims to get an insight into if such a tool has the potential to support the early-career journalists.

This research work consists of; 1) Interviews with domain experts in the field of journalism and UGC, and empirical analysis of these as requirement gathering and input to the prototype, 2) The construction of the prototype, 3) User evaluation of the prototype.

Figure 1.1 illustrates this study's research process.

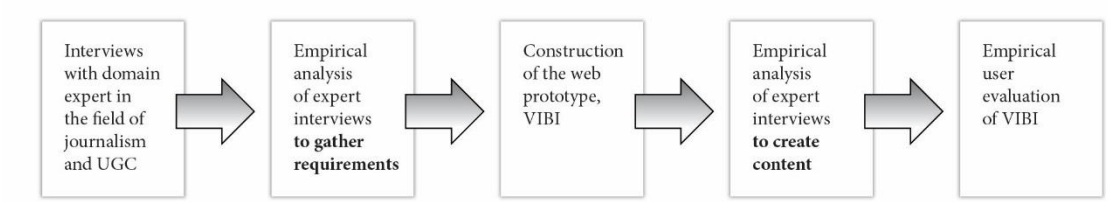

FIGURE 1.1: THE RESEARCH PROCESS

The purpose of this study is to support newsroom employees with the challenging and important task of evaluating and checking the public's contribution of image material, focusing on novice journalists and supporting them in the various tasks related to visual user-generated content. As a consequence of this, I hope to ensure that consumers of news are provided with reliable and trustworthy user-generated content. In addition, this thesis aims to communicate findings in such a way that other researchers can benefit from this research.

1.2. Structure of Thesis

The following list presents the structure and outline of this thesis.

- Chapter 1 – Covers this thesis introduction, the research question and aim of thesis
- Chapter 2 – Introduces the background and related work
- Chapter 3 – Presents the methods used in this research
- Chapter 4 – Covers the development of the prototype's design and content
- Chapter 5 – Covers the evaluation of the prototype and the results
- Chapter 6 – Covers the discussion part of this thesis
- Chapter 7 – Concludes the thesis and discusses future work

Chapter 2 Background

This section presents relevant concepts and studies related to this thesis. First it provides an overview of human-computer interaction, value-sensitive design and media design. Then, user-generated content, its history and role in the news media, and the definition of visual UGC for this paper are described. Closing with a presentation of related work.

2.1. Human-Computer Interaction

Human-Computer Interaction (HCI) is a research field interlacing computer science with behavioral science and design. The field of HCI emerged in the early 1980s due to the widespread adoption of personal computers, and started out as a specialty area within computer science that embraced cognitive science and human factors engineering (Soegaard & Dam, 2013).

In the early days, HCI mainly focused on the concept of *usability* – whether the user interfaces were safe to use, efficient, effective and easy to learn and remember (Rogers, Sharp, & Preece, 2011). Since then, HCI has broadened and become concerned with understanding, designing for, and evaluating the *user experience* (UX). While usability is concerned with the ease of use and measuring productivity, user experience addresses the user's emotions and how the system feels to a user.

This transformation of the HCI field has been organized by Suzanne Bødker (2006, 2015, pp. 24–26) into three waves: The *first wave* stems from the early days of HCI and consists of cognitive science and human factors, focusing on the user by following firm guidelines, using formal methods, and through systematic testing. While in the *second wave*, the focus shifted to how groups worked with software collections in a work setting, using methods such as design workshops and prototyping. Lastly, the *third wave* challenges values and methods from the second wave and embraces experience and meaning in the everyday life of people. Similarly, Harrison, Tatar and Sengers (2007) is behind a somewhat parallel analysis of the development of HCI, referring to the three paradigms of HCI.

As waves on the ocean, Duarte and Baranauskas (2016) argues that a new HCI wave does not replace an existing wave, but merely coexist within the scientific community. The authors refer to the ACM Conference on Human Factors in Computing Systems, ACM CHI 2016, where the HCI studies presented, ranged within all three waves.

2.1.1. HCI Research as Problem Solving

HCI is a multidisciplinary and elusive field, and thus it can be somewhat difficult to explain what exactly the HCI field entails. Oulasvirta and Hornbæk aims to establish a coherent view of HCI by finding a common denominator of HCI research: "to solve important problems related to human use of computing" (2016, p. 4957). In their meta-scientific essay on HCI research, they present HCI as problem solving for three paradigms: empirical, conceptual and constructive.

Oulasvirta and Hornbæk define *empirical research* as "creating or elaborating descriptions of real-world phenomena related to human use of computing" (2016, p. 4958), which includes investigating new phenomena often through qualitative research, identify important factors and measure and quantify their effects (Oulasvirta & Hornbæk, 2016).

While they describe *conceptual research* as work explaining "previously unconnected phenomena occurring in interaction" (2016, p. 4958). The outcome of conceptual research can be theories, concepts, methods, principles, and models (Oulasvirta & Hornbæk, 2016).

Lastly, *constructive research* entails "producing understanding about the construction of an interactive artefact for some purpose in human use of computing" (Oulasvirta & Hornbæk, 2016, p. 4958). Here, the goal is not the construction of the prototype or artefact, but to understand the process of how the prototype came into being, its ideas and principles, by documenting and describing the design process thoroughly and justifying choices.

This leads Oulasvirta and Hornbæk to define a research problem in HCI as "a stated lack of understanding about some phenomenon in human use of computing, or stated inability to construct interactive technology to address that phenomenon for desired ends." (2016, p. 4960)

These paradigms for HCI problem solving are often found in combination with each other. For example, an empirical study leading to design implications (empirical-constructive), or a study where an artifact is produced and contribute to understanding relevant phenomena (constructive-empirical) (Oulasvirta & Hornbæk, 2016).

This thesis contribution to the HCI research field would be the construction of VIBI as a supporting tool for novice journalists working with visual UGC, the following empirical evaluation of the design (see chapter 4.5) and the suggested design and requirements implications elicited from the empirical studies.

2.2. Value Sensitive Design

Value Sensitive Design (VSD) is a theory and method addressing ethical and value biases in the fields of information systems and HCI, emphasizing creating technology that considers human values throughout the development process.

> Value Sensitive Design is a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process. (Friedman, Kahn Jr., & Borning, 2013, p. 55)

In VSD the term 'value' has a broad meaning and refers to "what a person or group of people consider important in life" (Friedman et al., 2013, p. 57) as opposed to merely the economic value of a product. Friedman et al. (2013, pp. 58–59) lists 13 human values they consider of ethical importance to a design; welfare, ownership and property, privacy, freedom from bias, universal usability, trust, autonomy, informed consent, accountability, courtesy, identity, calmness and environmental sustainability.

The VSD process is iterative and according to Friedman et al. "an artifact or design emerges through iterations upon a process that is more than the sum of its parts" (2013, p. 59). They define this process as a tripartite methodology integrating conceptual, empirical and technical investigations (2013, pp. 59–61):

The *conceptual investigations* clarify fundamental issues and are concerned with both the direct and indirect stakeholders, and with conflicting values within design, implementation and use of the system. While the *empirical investigations* provide insight about the human context in which the prototype is located. This concept is used to understand users values, needs and practices and are often required in order to evaluate the success of a design. Lastly, the *technical investigations* involve analyzing the use of related technologies and designs to support the values identified in the conceptual investigations.

What distinguish VSD from related approaches is its "unique constellation of eight features" (Friedman et al., 2013, pp. 72–73): Value sensitive design 1) seeks to be proactive, 2) includes a large area in which the value arises, 3) has a unique tripartite methodology of conceptual, empirical and technological investigations, 4) includes all values and emphasizes moral values, 5) distinguish between usability and human values of ethical import, 6) identifies and addresses both direct and indirect stakeholders, 7) is an interactional theory where values neither are viewed as inscribed into theory, nor as

transmitted by social forces and 8) builds on the belief that certain values are universally held.

This research project seeks to understand what is important to journalists regarding visual user-generated content before starting the design process. The project considers both usability and ethical values such as trust, accountability, consent, ownership, privacy and identity important.

2.3. Media Design

The media design method is a value-oriented approach and stresses the importance of content in a design. The method combines well-established design science principles with media studies and has an iterative research process with a user centered approach.

Important to the media design method, is creating a new medium, and Nyre (2014) states the success of a medium should be measured by its communicative skills in addition to consider if it is profitable and usable. Lastly, this method considers establishing a company and having an innovation strategy as a final and important stage of a media design project.

What truly characterizes a media design is that the content is in the heart of the artifact, and that a new media development relies on high-quality content in order to function (Nyre, 2014). In addition, it is essential to have an editorial link that addresses the demands the society has for the media and that ensures the quality and credibility of the product. "All media design projects have to include an ethical platform, a responsible editor at some level of the operation, procedures and norms for content production, and a target audience that represents the public interest" (Nyre, 2014, p. 86).

Nyre considers the medium merely a material tool and argues that the main focus ought to be on the communicative activity, and thus "researchers must try out various editorial procedures and types of content in a way that is as methodically sound as the development process and the user-evaluations" (Nyre, 2014, p. 97).

This research project concentrates on journalists working with visual user-generated content, emphasize the importance of the content in the design, considers ethical journalistic values, and includes newsrooms procedures and norms in the design. However, this is a research through design-project and do not consider the profitability of the media design, establishing a company or an innovation strategy as suggested in the media design method.

2.4. User-Generated Content

The Organization for Economic Cooperation and Development (OECD) is an intergovernmental economic organization founded in 1960 with 35 member-countries, including Norway. OECD (2007, p. 9) defines User-Generated Content (UGC) as

i) content made publicly available over the Internet
ii) which reflects a certain amount of creative effort, and
iii) which is created outside of professional routines and practices.

In Axel Bruns words user-generated content (UGC) is "a generic term that encompasses a wide range of media and creative content types that were created or at least substantially co-created by "users" - that is, by contributors working outside of conventional professional environments" (2016, p. 1).

UGC is not a new term, and often goes by other names such as eye-witness media or user-created content (UCC). According to Bruns (2016) UGC predecessor the invention of the World Wide Web, but gained its widespread recognition with the emergence of what is often referred to as the Web 2.0 (O'Reilly, 2005). The technological advancements such as blogs, wikis and social media sites changed the way information was provided and gathered. The essence of these tools is their ability for users to collaborate with peers, create their own content and publish it. This differentiate it from the early web-approach where the user was merely a passive subject.

2.4.1. UGC and the News

According to Gillmor (2004) something changed in the news industry around the time of the terrorist attack on September 11, 2001, and within the mainstream broadcasting context the history of UGC is considered to be with the London bombings of July 2005 (Wardle et al., 2014, p. 12). Wardle et al. (2014) clarify that this was the first time the BBC had a bulletin with pictures captured by people at the scene, and the event that lead BBC to establish their UGC Hub to deal with and verify user contributions.

To give an example; in the time before the London bombings BBC News Interactive in London received on average 300 audience emails a day, while in 2010 this number had grown to be 12 000 (Wardle & Williams, 2010, p. 781). This development of user contributions can be seen in context with the emergence of camera phones and the

possibilities to send and receive photos, and later the endless opportunities of the smart phone coupled with the commonness of social media.

Traditionally, news content was created by journalists, but now "news was being produced by ordinary people who had something to say and show" (Gillmor, 2004, p. 58) and anybody could be an on-the-spot reporter. The hard distinction between the user and the producer is washed away, and news organizations no longer have monopoly over news stories and what is published where. Thus, it is no longer uncommon for breaking news to first be mentioned in social media. "It was possible – it was inevitable – because of new publishing tools available on the Internet" (Gillmor, 2004, p. 58).

User-generated content in news media is often vocalized in terms of participatory or *citizen journalism* as Gillmor (2004) labels it. In the famous words of Jay Rosen, citizen journalists are "the people formerly known as the audience" (Cited in Jönsson & Örnebring, 2011, p. 128), and are described as "people who don't have jobs with news organizations but are performing a similar function" (Lemann, 2006). Wardle et al. (2014) distinguish between citizen journalists, people with an *interest* in documenting news events and the *accidental journalist*, "people with a camera or smartphone on hand, who happened to be in the right (or wrong) place at the right (or wrong) time" (2014, p. 3). Accidental journalist or not, contributors of UGC are simply users functioning as producers, carrying out roles that originally were associated with professional journalists.

However, Andrew Keen (2007) argues that there is a vast difference between a professional and a non-professional journalist. He clarifies that while professional journalists have education and experience of reporting and editing news, citizen journalists simply presents opinions and rumors as facts. "Citizen journalists simply don't have the resources to bring us reliable news. They lack not only expertise and training, but connections and access to information." (Keen, 2007, p. 48) This is substantiated by Jane B. Singer claiming that "everyone can be a publisher, but not everyone can be a journalist" (2010, p. 128).

While UGC often is spoken of in terms of participatory or citizen journalism, UGC in practice has, as stated by Jönsson and Örnebring (2011), very little to do with journalism. UGC is a broader concept than journalism (Jönsson & Örnebring, 2011; Paulussen & Ugille, 2008) and should be seen in context with a wide definition of the public sphere (Jönsson & Örnebring, 2011).

This phenomenon of citizen journalism and UGC creates new opportunities for newsrooms, but also brings new challenges to the table (Diplaris et al., 2012; Paulussen & Ugille, 2008). Paulussen and Ugille (2008, pp. 32–36) presents three professional and organizational constraints found in the newsrooms:

First, the *organizational structure* of newsrooms, dividing paper and online journalism, IT-staff and editors, and journalists and the users, do not foster collaboration and makes it difficult to establish a participation culture.

The second constraint is *work practices*. Dealing with UGC and interacting with users are time consuming tasks that becomes an increasingly important and larger part of the journalistic working day, which may result in an enlarged workload for journalists. Journalists tend to prioritize the core journalistic tasks and neglect UGC when being exposed to a big workload and increased pressure.

The third and final constraint presented is the *professional attitude towards the user*. The quality of UGC is of concern to journalists and they must be careful when dealing with such content since amateurs may not have the same credibility, standards of objectivity, accountability and independence as official news sources and often has a personal bias.

Therefore, in order to turn UGC into journalism and meet the standards and quality expected of journalistic content, professional news editors and journalists are essential. As argued by Jönsson and Örnebring (2011, p. 128) the media industry has its obligation to traditional editorial logics and the principle of "we write, you read" must rule the newsrooms. The authors explain that newsrooms allow users to contribute in certain stages of the news production, while other stages are strictly guarded by professionals.

The direct user involvement in news production is therefore limited, and the person creating the content is often not included in the editorial process. Newsrooms are simply not in a position where they can, or want to, give the complete power over to its users. According to Singer (2010, p. 138) journalists favors the extension of their gatekeeping role to include user contributions, but see it as their job to vet and verify this information and *then* make it available for the audience.

2.4.2. Visual UGC in News Media

This paper concentrates on *visual* user-generated content in news media and adopts the definition of UGC as by Wardle et al.; "photographs and videos captured by people who are not professional journalists and who are unrelated to news organizations" (2014, p. 10).

It should be noted that throughout this thesis, both "UGC" and "visual UGC" are used to refer to visual user-generated content.

2.5. Related Work

This section presents the results from the literature search conducted, reviewing existing and relating research and design within visual UGC in news media. The development in this field is racing, new tools are constantly being developed and existing tools continues to be improved and further developed.

2.5.1. Global Study of Visual UGC in News

"Amateur Footage: a Global Study of user-generated content in TV and online news output" (Wardle et al., 2014) is an comprehensive report on the use of visual UGC amongst broadcast news channels. The study sheds light on how much visual UGC that is being used, why, under what conditions, and if this causes any issues for news organizations.

The key findings of the study are that visual UGC is used daily and can produce stories that otherwise would not be told, and that such content is often used when other imagery is not available. Further, the news organizations are poor at acknowledging when they are using UGC and at crediting the photographer. In fact, the study reveals that 72 percent of the UGC was not labeled or described as UGC, and only 16 percent of UGC on TV had onscreen credit. In addition, many national news organizations receive their visual UGC from agencies, and therefor is often unaware of the content's origin and simply think of this as "agency footage". The study also reveals that there is a lack of training in newsrooms:

> News managers are often unaware of the complexities involved in the everyday work of discovering, verifying, and clearing rights for UGC. Consequently, staff in many newsrooms do not receive the training and support required to develop these skills. (Wardle et al., 2014, p. 3)

The authors argue that it is important with systematic procedures to provide clear guidance on which checks that have been completed, along with the level of confirmation regarding specific facts about the footage.

Wardle et al. (2014) concludes that crediting practices needs to improve, and that newsrooms should get used to pay for this type of content. Further, when requesting images, the newsgatherers need to use such a language that the uploaders understands not to put themselves at risk to capture UGC. News managers should understand the implications of integrating UGC and gain a stronger understanding of the practices employed by different agencies.

2.5.2. Aid Journalists in Analyzing and Filtering UGC

Diplaris et al. (2012) review current challenges in the media industry related to the user as a content provider and author, and present a new system, SocialSensor[1], that captures the emerging knowledge from Social Media and performs automated verification checks.

From an information providers perspective, Diplaris et al. (2012, p. 1242) presents 12 challenging issues in journalism when relying on social media to gather information:

Verification – Ensure the content is accurate or true
Filtering – According to needs or interests
Sensing – Discovering trending topics to guide further investigations
Analysis – Analyze trends and tendencies
Visualization – Presents easy to understand search results
Cross-platform – Enables search across different social media platforms
Speed – Processes need to happen quickly and be accurate
Legal – copywrite/ownership need to be solved quickly and user-friendly
Attribution – Attribute content to sources, not compromising privacy
Business – Transactions (for example of posted content) must be ensured in a safe and fair manner that is legally binding
Linguistics – Searches should work across different languages
Usability – Tools and interfaces should be intuitive and easy to use

[1]SocialSensor - http://www.socialsensor.eu/

Based on these issues the authors identify six core journalistic needs when dealing with social media. These are presented in Table 2.1.

TABLE 2.1: KEY JOURNALISTIC NEEDS (DIPLARIS ET AL., 2012, P. 1243)

Requirements	Descriptions
Trend and Sentiment detection	Journalists need ways of tracking trends and sentiment in a specific moment and over time
Real-time alerts	Journalists need to be alerted in real time about breaking news and other new developments on issues they are working on
Trustworthiness	Journalists need to have access to eyewitnesses or other trustworthy informants on breaking news
Responsiveness	Journalists need to quickly find answers to specific questions they have about a story they are working on
Access to contributors	Journalists need to have access to individuals and specific groups (e.g. key influencers in Social Media)
Verification	Journalists need tools that support them in the verification process

Diplaris et al. envisions a new journalistic system, the SocialSensor, to solve some of these problems, and these six needs lead them to the conclusion that such a tool should be able to: a) identify and visualize events and trends across social-media in real-time b) identify key influences and opinion formers around any event, and c) support journalist in verifying user-generated content from social media (2012, p. 1243).

SocialSensor is a 3-year FP7 European Integrating Project that "aspires to provide a tool for professional journalist investing in innovating analyzing methods of social sensors (such as event and influence detection), assisted by effective indexing of real-time social media streams" (Diplaris et al., 2012, p. 1246). The authors argue that this tool will differ from other available tools as it concentrates on serious journalism, and will operate cross-browser, network and languages.

The authors clarify that the SocialSensor journalistic system should crawl content from all major social media platforms and put the newsworthy content in context with traditional mainstream media, offering the journalist richer and more comprehensive information. This to be presented real-time, supporting filtering and analyzes of results, identifying key

influencers and gather their contact information through linking social media to publicly available information, and verifying the content through automated checks.

2.5.3. Supporting the Use of UGC in Journalistic Practice

Tolmie et al. (2017) documents how an in-depth study of ethnographic journalism practices and work was used to inform the development of the Pheme Journalist Dashboard[2], as well as the evaluation of Pheme. This paper focusses particularly on how UGC is being used and verified by journalists working in news desks.

The key points presented in this study is that

1. Verification is an ongoing process in the journalistic workflow, and verification tools need to support this process by providing information about verification work already completed.
2. Newsrooms are subjects to change and time pressure, editorial preferences, target audience etc. can influence how they manage and use UGC. In addition, preference for a dashboard can vary and change from journalist to journalist.
3. The fast pace news production requires a journalistic tool to provide exactly what the journalists are looking for, rapidly. Which again creates challenges for designers as a dashboard should address both "the variability of both UGC use and the diverse ways in which journalists may need to verify the content it provides" (Tolmie et al., 2017, p. 3641).

The authors argue that machine learning is central to Pheme to determine the veracity of social media content, and that the machine learning technique applied to conversational tweet threads is what differentiate Pheme from other tools. Pheme aims to provide journalists with a better understanding of what constitutes trustworthy information and detects how rumors emerges and unfolds through social media, using Twitter as its primary source of UGC.

[2] PHEME - https://pheme.weblyzard.com/

2.5.4. INJECT Journalistic Search Tool

INJECT[3] is a European industry-oriented project providing a search tool for supporting the creative process of idea development in news journalism. INJECT Norway is the Norwegian branch of the project which concentrates on local newspapers writing in New Norwegian. INJECT builds on natural language processing and case-based reasoning, and links to a given newspaper's archive and databases.

INJECT uses creative strategies to search news information, then presents results and creative sparks to support idea generation. The presentation was designed to teach and encourage creative skills, and as the tool does not automate the process, the journalists still needs to choose an angle, and examine, interpret, style and present articles. (Maiden et al., 2018)

According to the projects website (Inject, 2018) the tool is created for journalists who wants to diversify and broaden their reporting, and can function as a training tool for early-career journalists and journalism students.

Maiden et al. (2018) conclude that the use of INJECT was effective, although it functions better on feature articles than news articles as writing feature stories requires more creative thinking. The paper reveals that INJECT supports discovering rather examining, and that news organizations recognize INJECT as a tool to discover their own related content, but only if the tool can recognize related news quickly enough.

2.5.5. First Draft's Verification Guides

The collaborative nonprofit organization First Draft was founded in June 2015 to research, raise awareness and address challenges related to trust and truth in media, and in 2016 they partnered with newsrooms, universities, and technology and human rights organizations (First Draft, 2018). From Norway, First Draft collaborated with Dagbladet and OsloMet (then known as Akershus University College of Applied Science (HiOA)) (First Draft, 2017). Today, First Draft is a project of the Shorenstein Center on Media, Politics and Public Policy, and provides practical and ethical guidance on how to find, verify and

[3] INJECT - https://injectproject.eu/

publish UGC and uses research-based methods to fight "fake news" online (First Draft, 2018).

First Draft has created a verification guide - a checklist - for images and video on print, online and as a Chrome Extension. As this study builds on the paper version of the guide, this is included in appendix A.

VeriCheck is the interactive version of the verification guide. The extension allows you to have an image or video open in your browser as you work through the checklist, and then calculates a verification score and creates a button that can be embedded on a website, as shown in Figure 2.1.

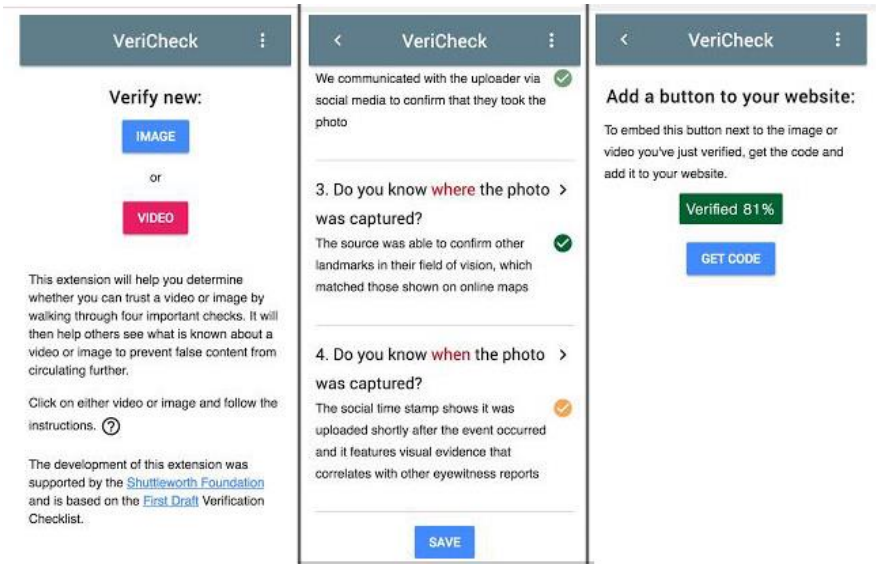

FIGURE 2.1: SCREENSHOTS OF THE CHROME EXTENSION VERICHECK (28.09.17)

Recently, First Draft[4] have started to focus on educating journalists and the public in a larger degree, by offering verification courses, more resources and training based on their research and experience.

2.5.6. The Reveal Media Verification Assistant

Reveal is a FP7 ICT project aiming to advance the necessary technologies for making a higher-level analysis of social media possible, looking at Social Media verification from a

[4] First Draft - https://firstdraftnews.org/

journalistic- and enterprise perspective, developing tools and services for this purpose (Reveal, 2018). The project enables users to reveal concepts hidden within information such as reputation, influence and credibility.

The Reveal Image Verification Assistant[5] is a verification tool that analyzes the veracity of online media resources. The tool aims to be a comprehensive tool for verifying media online by including current verification tools and using experimental algorithms from research literature. The assistant uses several image tampering detection algorithms, metadata analysis, GPS Geolocation, EXIF Thumbnail extraction and integrates reverse image search through Google (Verifymedia, 2018). At the time when this was written, the platform was still in its alpha stage.

2.6. Chapter Summary

First, this chapter presented the theoretical foundation for this research project: HCI, Value Sensitive Design, Media Design and UGC in relation to News Media. Then, a literature review was presented in the section of related work, showing associated journalistic tools and research. The verification guide by Dr. Claire Wardle should especially be mentioned as it is included in the VIBI prototype, further detailed in section 4.4.1.

This study's contribution to the field of HCI is the construction of the prototype and the following empirical study of the design and the design implications and suggestions for future researchers. The research project revolves around visual UGC in the news and emphasizes ethical journalistic values, and as essential to a media design, the content is in the very heart of this project.

[5] http://reveal-mklab.iti.gr/reveal/

Chapter 3 Methodology

In this chapter, an overview of the methods used in the prototyping process is presented. First, the relationship between design and science is presented, followed by the Research through design method. Lastly, the methods used in the development and evaluation of VIBI are described.

The relationship between design and science is a highly discussed topic. Nigel Cross (2001, p. 1) points to the 1920s focus on scientific design *products*, and the 1960s concern for the scientific design *process*.

According to Zimmerman, Forlizzi, & Evenson (2007) the design methods movement emerged due to the increased complexity of systems and the necessity to formally address design practices in the science community. These early design methodologists distinguished between the development of knowledge (science) and the artifact (design);

> The scientific method is a pattern of problem-solving behavior employed in finding out the nature of what exists, whereas the design method is a pattern of behavior employed in inventing things...which do not yet exist. Science is analytic; design is instructive. *(Gregory, cited in Cross, 2001, p. 2)*

Considering, it is not vital in design to validate results or a hypothesis, the design or artifact itself is neither recognized nor regarded an important source of study for the early design researchers. The Design Research Society held a conference on the design science method in 1980 and Cross claims that

> The general feeling from that conference was that it was time to move on from making simplistic comparisons and distinctions between science and design; that perhaps there was not so much for design to learn from science after all, and that perhaps science rather had something to learn from design. *(Cross, 2001, p. 2)*

In the field of HCI the research through design-model "advances the work of the design research community by expanding their focus on methods and analysis of artifacts to include making as a method of inquiry in order to address *wicked problems*" (Zimmerman et al., 2007, p. 496). Artifacts, or *prototypes*, is here recognized as source of scientifically knowledge.

3.1. Research through Design

Zimmerman et al (2007) propose a model for how to conduct interaction design research within HCI. They separate design researchers from design practitioners. While design practitioners concentrate on commercially viable and successful products, their model emphasizes how design researchers strive to produce the *right* thing; "a product that transforms the world from its current state to a preferred state" (Zimmerman et al., 2007, p. 493).

Horst Rittel and Melvin Webber (1973) characterized design and planning problems as *wicked problems* – problems where it cannot be clear whether the problem has been solved or not and where "the aim is not to find the truth, but to improve some characteristics of the world where people live" (Rittel & Webber, 1973, p. 167). Their work points to the opportunity for design research to provide complementary knowledge through design methods and processes.

The Research through Design (RtD) framework suggest that interaction design researchers should address wicked problems by integrating

> the true knowledge (the models and theories from the behavioral scientist) with the how knowledge (the technical opportunities demonstrated by engineers). Design researchers ground their explorations in real knowledge produced by anthropologists and by design researchers performing the upfront research for a design project. *(Zimmerman et al., 2007, p. 497)*

To formalize the research method Zimmerman et al. (2007, pp. 499–500) propose a set of four criteria for evaluating the quality of an interaction design research contribution:

As it is not expected that reproducing the *process* will give the same results, design researchers are judged by the accuracy of the methods they employ and the reason for their selection. Further, it is important that the design research contribution bring something new to the table, constituting a significant *invention*. Design researchers must prove this, and a comprehensive literature review is required. *Relevance* is emphasized, and researchers must frame the work within the real world, disclosing why the state they want to achieve should be preferred. Lastly, the design research should provide *extensibility*. This means that the design researchers must document and describe the project in a way such that other researchers can learn from and make use of the research contribution.

The RtD framework was chosen for this project as it has been widely adopted by the HCI community and acknowledges the prototype as a contribution to research. This study uses

RtD for guidance throughout the research process in order to address the wicked problem of supporting journalists with the process of verifying visual user-generated content, systematically creating a prototype and derive knowledge from it.

3.2. User-Centered Approach

As described in section 2.1, in the 1980's HCI changed towards early user involvement within interaction design, emphasizing usability. Today, a user-centered approach to development is essential in interaction design.

Gould and Lewis, referenced in Rogers et al. (2011, p. 327), describe three principles that could lead to a useful, easy to use system: For one, have an *early focus on users and task*s by studying the users while they perform tasks, include the nature of the tasks and involve users in the design process. Secondly, conduct *empirical measurements* observing, recording and analyzing user's performance and reactions to prototypes. Lastly, have an *iterative design* process and repeat the cycle as frequently as necessary.

To guide the development phase of this research project, principles and common techniques from user centered design was practiced. In the following sections, the techniques used to establish requirements for the design process are described.

3.2.1. Semi-Structured Interviews

Interviews are commonly used in both ends of a design process, in the beginning to establish requirements and in the final stages to evaluate the finished design. As clarified by Oates (2006) interviews are a suitable data gathering technique when researchers aim to; obtain detailed information, ask complex questions, investigate sensitive subjects, or explore emotions not easily grasped by simple forms.

Semi-structured interviews are a hybrid of unstructured and structured interviews where the participants can talk somewhat freely within the frame given upheld by the interviewer, and the interviewer can ask follow-up questions as needed to cover the chosen subjects. (Oates, 2006) In this way, interviewees can go into greater details and mention information relevant to the research and the interviewer can ensure that the topics are properly covered.

In this study, semi-structured interviews were used in both ends of the development. In the early stages, expert interviews were conducted to find out how newsrooms work with user-generated content and to explore possible ill-defined problems journalists has with visual

user-generated content. In the final stages, interviews were used to evaluate the design of VIBI.

3.2.2. Personas

Originally, the persona method came from the development of IT-systems and has been around since late 1990s (Nielsen, 2018). Though the method has existed in 20 years, Nielsen (2018) state that there is not an agreement on whether the persona should be based on assumptions or data, on what the description should include, or on the benefits of using personas in the design process.

According to Nielsen a persona description "use the area of focus or domain you are working within as a lens to highlight the relevant attitudes and the specific context associated with the area of work" (Nielsen, 2018), and Rogers et al. (2011) clarifies that personas are not real people, but rich descriptions of typical users of the product. These persona descriptions includes, according to Rogers et al. (2011), a persona name, photograph and some personal details, as well as a description of goals, skills, attitudes, tasks and environment. Nielsen argues that the purpose of a persona is not the description, but "the ability to imagine the product" (Nielsen, 2018). She claims that they are simply a means to create specific and precise descriptions of products.

The personas in this project were created to help the design researcher to maintain the user perspective throughout the design process. The personas were based on the expert interviews conducted and the design workshop held with ViSmedia. In addition, the personas were used to generate ideas by visualizing how a possible product could be used by a persona, described in the section of scenarios below.

3.2.3. Scenarios

A scenario is a story of how a product will work, including the construction, how it can be used and in what context (Nielsen, 2018). Instead of concentrating on the interaction with technologies, scenarios focus on the human activity; why people do things the way they do and what their goals are (Rogers et al., 2011). By the exploration of a systems context, needs and requirements, using a user perspective and user language, scenarios can work as a means for stakeholders to better understand products and to easily communicate with the developers and designers.

Nielsen (2018) describes that scenarios are very specific and details why a system is necessary. Further, she explains that scenarios let the designers to concentrate on the use of the product and since scenarios use a vocabulary and phrasing that is accessible and easily grasped by both users and designers, the method does not require expert knowledge in order to be understood.

In this design research project, scenarios were created in the early stages to envision the future use of the application in order to explore options and keep the focus on the use of the system.

3.3. Prototyping

A prototype is "a manifestation of a design that allows stakeholders to interact with it and to explore its suitability; it is limited in that a prototype will usually emphasize one set of product characteristics and de-emphasize others" (Rogers et al., 2011, p. 390).

According to Rogers et al. (2011) prototyping is recognized as an important aspect of the design process and an effective way to explore ideas. In design research, prototypes are what Zimmerman et al.(2007) refers to as the execution of the *right thing* (explained in Section **Feil! Fant ikke referansekilden.**)

Prototypes ranges from low-fidelity to high-fidelity. Low-fidelity prototypes are great to communicate ideas, and to quickly and at low a cost produce simple, easy-to-change prototypes. Though, they are of limited usefulness to usability testing and to code after, and hence such prototypes are intended for exploration only, and not integrated in the final product (Rogers et al., 2011).

Unlike prototypes from earlier stages, high-fidelity prototypes are fully functional and very similar to the final product. High-fidelity prototypes are great for exploration and tests (Rogers et al., 2011). However, they are expensive and time-consuming to create compared to low-fidelity prototypes and not effective in early stages.

High-fidelity prototypes are essential in a Research through design-project as they show what the intended *right thing* constitutes and therefore, VIBI was created as a fully-functional interactive web prototype.

3.4. Usability Evaluation

Fundamental to a user centered approach is evaluation, as evaluations ensures that the product is suitable by involving users throughout the whole design process (Rogers et al., 2011). User testing can take place in all stages of development, and in early stages the cost is lower, and the results can influence the design in a larger degree.

Broadly defined, usability evaluation or usability testing involves "a group of representative users attempting a set of representative tasks" (Lazar, Feng, & Hochheiser, 2017, p. 271) Usability testing can be used to learn about the users and their interactions and involve collecting data through a combination of methods such as interviews, experiments, observations and questionnaires.

The goal of usability tests are to "improve the quality of an interface by finding flaws-areas of the interface that need improvement" (Lazar et al., 2017, p. 264). The authors further disclose that usability tests also should emphasis the well-working areas in order to "keep those features in place" (2017, p. 264). Further, usability test emphasizes "flaws that causes problems for a majority of the people"(Lazar et al., 2017, p. 264), and preferences is therefore not considered to be faults.

According to Lazar et al. (2017) it has become common to refer to that five users is sufficient to discover 80% of the usability problems with an interface. However, some researchers disagree with this and an ideal number is not agreed upon. Lazar et al. (2017) explain that it is challenging to estimate the right amount of users as one simply does not know how many issues there are in advance.

3.4.1. Observation

Observation as a data gathering technique is useful throughout the product development, and in general, observational methods are concerned with discovering and understanding human behavior. Rogers et al. (2011) explain that in the early stages of the design process, observations help designers understand the user, while observation in later stages can investigate how well the prototype supports user's tasks and goals.

According to MacKenzie (2013) the observational methods is often qualitative rather than quantitative, embracing common techniques used in HCI research (including interviews, field investigations, case and field studies, storytelling, walkthroughs and so forth). Further, MacKenzie discloses that observations involve note-taking or recordings practices to

examine and record the quality of the interactions as human feelings, thoughts and reflections etc. are difficult to measure. The author argues that the real phenomena, by directly observing human behavior in a natural setting, are of high relevance, but that the method lack the precision that controlled experiments brings.

3.4.2. System Usability Scale

The System Usability Scale (SUS) is a likert scale developed to "quick and dirty" measure the usability of computer systems in the short time available during an evaluation session (Brooke, 2013). Brooke (2013) clarify that since the scale turned out to be a simple and reliable tool, it was made available to others in 1986. From then on, its use has increased exponentially, and it is now being referred to as an industry standard.

The SUS consists of ten questions, or statements, each with a five-response option stretching from *strongly agree* to *strongly disagree*. An example of a statement is demonstrated in Figure 3.1.

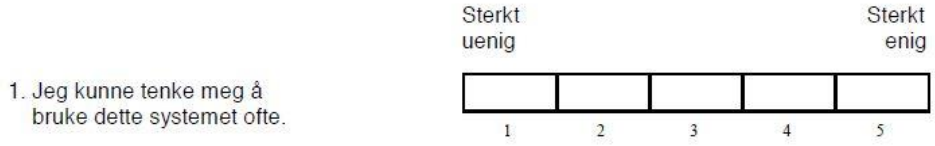

FIGURE 3.1: EXAMPLE OF SUS STATEMENT (FROM THE NORWEGIAN VERSION BY DAG SVANÆS, NTNU 2006.)

Five of the statements are positive, while the other five are negative. The statements are alternated to avoid response biases hoping that the respondents would "read each statement and make an effort to think whether they agreed or disagreed with it" (Brooke, 2013, p. 34). Brooke (2013) reveals this was 'good practice' when SUS was developed, and that he might do it differently today referring to Sauro and Lewis (referenced in Brooke, 2013) findings that there are problems with both user responses and the scoring of them.

Each of the statements gets a calculated score that ranges from 0 – 4, four being the highest positive score. For the odd numbered, positive statements (1, 3, 5, 7 and 9) subtract 1 from the user response. For the even numbered, negative statements (2, 4, 6, 8 and 10) subtract the user response from 5. Summarize these and multiply the sum of the scores with 2,5 to obtain the overall value of SUS.

Brooke (2013) discloses that this calculation method was done to get a score between 0-100 as it was easier to understand, but that the downside is that the scores often are misunderstood by researchers as percentage scores.

As a solution, Jeff Sauro suggests that "the best way to interpret your score is to convert it to a percentile rank through a process called normalizing" (Sauro, 2011). He calculated the average SUS score from 500 studies to be 68. A score higher than this would be considered as above average and anything lower recognized as below average. He demonstrates that a SUS score of 70 would be close to the average score and therefore being near 50 in percentage as shown in Figure 3.2.

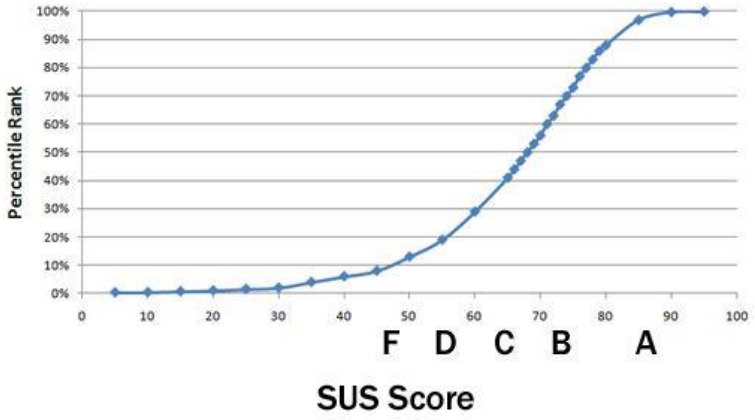

FIGURE 3.2: PERCENTILE RANKINGS OF SUS SCORES (SAURO, 2011)

Taking a different approach, Bangor, Kortum and Miller (2009, 2008) analyze the relationship between ratings of products and SUS scores proposing that adjective ratings, accompanies the scores to better interpret and explain each score, as presented in Figure 3.3.

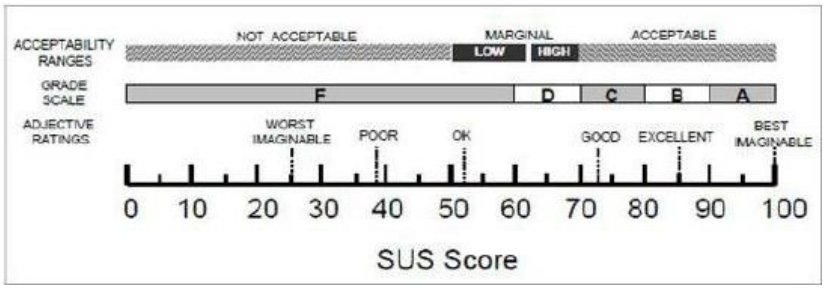

FIGURE 3.3: ADJECTIVE RATINGS OF SUS SCORES (BANGOR ET AL., 2009, P. 121)

Bangor et al. argue that

> …products which are at least passable have SUS scores above 70, with better products scoring in the high 70s to upper 80s. Truly superior products score better than 90. Products with scores of less than 70 should be considered candidates for increased scrutiny and continued improvement and should be judged to be marginal at best. (2008, p. 592)

According to Bangor et al. (2009) their analysis shows that adjective ratings highly correlates to SUS scores, help professionals interpret individual scores and aid in explaining ratings to non-human factors professionals.

Sauro (2011) summarizes that the system usability scale measures both usability and learnability, is reliable, quick and valid. Continuing that SUS is not for diagnostic, scores are not percentages, and it is far from dirty.

Originally, SUS was used after recorded usability sessions, where the low SUS scores indicated what tapes the researches needed to review to identify the interface problems (Sauro, 2011). In other words, a SUS will not give any answers to why the users are responding the way they are, and further investigations are necessary.

This research project used the Norwegian version of SUS by Dag Svanæs, NTNU 2006. The scale was used to expose potential usability problems of the system, while semi-structured interview (described in section 3.2.1) followed suit to further diagnose issues and investigate user's experience of the prototype.

3.5. Chapter Summary

This chapter presented the methods used in this design research-project, starting with a description of the relationship between design and science and presenting the Research

through design method, followed by detailing the user centered methods, prototyping and evaluation methods.

The project takes a research through design approach, contributing a design research prototype and design implications to the design research community, following user centered methods to establish requirements and putting the user in the center of the design process. The prototype was created as a fully functional interactive web prototype to illustrate what the right thing to create can be, using well-established methods to evaluate the usability of the design.

Chapter 4 Development

As detailed in chapter 3, following a research through design approach involves finding the *true* knowledge of a domain and integrate this with the engineers *how* knowledge in order to create the *right* thing.

This chapter details the iterative process of designing and developing VIBI in a research through design exploration. A total of three iterations were completed to produce the current version of VIBI.

In the effort to design VIBI, domain expert from various news desks were interviewed and colleagues from ViSmedia joined in on the ideation session influencing the design of VIBI. In the last phase, future journalists, novice journalists and experienced freelance journalists working with visual UGC helped evaluating the existing prototype.

This chapter also presents tools, methods and languages used in the creation of VIBI, as well as detailing the process of creating the content.

Before detailing each iteration, a summary of each iteration is presented:

1st iteration: Mainly consisted of defining the problem space, ideate, establish requirements and sketching the idea down.

2nd iteration: Concentrated on creating and implementing a fully functional web prototype, and making sure technical issues were found and solved.

3rd iteration: The last iteration included some alterations to the design and emphasized content creation.

4.1. Development Method

The development phase of VIBI was inspired by the lean software development method, Kanban, mainly by using a Kanban board to visualize and keep track of the work needed to be done throughout this study. The method focuses on continuous work and the ability to have a flexible to do-list, and this is why this method was preferred to others.

The work management application Trello[6] was used to organize the project into a board. Trello draws on the principles of Kanban and functions like a digital whiteboard with sticky-notes, visualizing what is being worked on, by who and where it is in the process. The notes or cards can contain attachments and support collaboration through comments.

Included in the Kanban board was all tasks related to this project, from things to read up on and learn, to gathering users, development tasks, appointments and so forth. The work-in-progress limit was preferred to be below three, and mostly kept at two. One main advantage of using a digital board was that it was available whether I worked in my office, from home or on site. A non-digital Kanban board was used alongside, displayed in the office.

4.2. First Iteration

First, assumptions were written, and then the exploration began with expert interviews with three Norwegian newspapers; one local, one regional and one national. This was to establish how online news media work with visual user-generated content, and to find out what was needed to support journalists with this process, discover the wicked problem in news media regarding visual UGC and to help define the problem space.

Further, an ideation workshop was held with colleagues from the VisMedia research project. This session was based on the information retrieved from the interviews, and the goal was to come up with ideas to what system to create.

With an idea to mind, personas and scenarios was created to ensure that the focus was on its future users and use of the product throughout the development, leading to the

[6] Trello - https://trello.com/

establishment of both the system requirements and the UX goals. Finally, a prototype was sketched out based on the previous described research and work.

4.2.1. Assumptions

Before the research work began, assumptions regarding news media and their use, verification and training of visual UGC were made. These assumptions guided further investigations and therefore functioned as a good starting point for the thesis' research work.

The assumptions made included what the different types of visual UGC the media works with are, how they assess some of the content, how the journalist training is in regard to UGC, who the contributors are, hiding the identity of contributors, tagging content as "UGC", censoring images, UGC's role in breaking news, UGC of high newsworthiness, and payment of UGC. The actual assumptions can be found in appendix B.

4.2.2. Expert interviews

To explore if the assumptions were accurate and go into the depth of how online newspapers in Norway work with visual user-generated content, interviews were conducted with experts from three Norwegian online newspapers, ranging from local to national in news coverage with one domain expert from each newsroom.

The online newspapers participating were; Bergensavisen (BA), a local newspaper in Bergen, Bergens Tidende (BT), a regional newspaper located in Bergen and Verdens Gang (VG), a national newspaper with its main office in Oslo. BA is owned by Amedia, while BT and VG is owned by the Schibsted Media Group.

Although this is a small sample size, the selection is varied and relatively broad as the newsrooms have different coverage areas and are all of different sizes.

The three domain experts have years of experience working with visual user-generated content in the respective newsrooms and are all driven in their field, and their experience brought valuable qualitative information to this study. The participants were two men and one woman. The interviews were phone-based, held in Norwegian and conducted in November 2015. Quotes used in this thesis has been translated to English. The translations are not verbatim. However, I have tried to keep them close to the original to retain the intentions of the participants.

These expert interviews revealed problems connected to the journalistic processes around visual user-generated content and assisted with background information and requirements to what to design to answer the RQ: How to design a tool supporting novice journalists to manage and verify visual user-generated content? Later, the interviews were used to produce relevant content to the application (see section 4.2.2), placing the content in the center of the design which is essential to a media design.

Based on the assumptions, an interview guide was formed to have an overview of what to ask the interviewees. The interviews were semi-structured and therefore allowed follow-up questions and exploration of topics as the interview developed. The interview guide can be found in appendix C, and the consent form in appendix D.

The discoveries from the interviews are detailed in the subsections below.

Training in the Newsrooms

Newsrooms have a learning-by-doing culture and rely on situations arising in order to learn from them. Two of the domain experts explain that there is always someone with more editorial experience to ask questions and to learn from.

The domain expert from VG elucidates that

> quite a few know what is right to do, and by working here learns the ground rules. When you end up in situations, you learn by what the superiors and colleagues do. In that way, you set the standard. Having a lot of evaluation meetings in the newsroom, both with the editor and the news manager, and you learn from it. (VG)

Substantiating this is the domain expert in BT explaining that "…there is always an experienced front manager or other manager at work who watch these things. The most common pitfalls are of such matter that people learn quite quickly how to avoid them".

Here the domain experts suggest there are some assessments that are very common, and thus the journalists quickly learn to avoid the most common pitfalls. In addition, there is always an experienced manager to learn from and who keeps an eye on the cases, and it can seem as though the newsroom evaluates and assesses what they did in situations and learn from it as a unit.

The domain expert from BA explain that though UGC is not a new phenomenon, "there has been a very rapid development on the user contributions of images and videos in the

recent years, and it is a road that has been created very much along the way". The domain expert details that assessing visual UGC is often considered a journalistic decision, and that specific training on this particular topic were never received.

By this the domain expert say something about why there is a learning-by-doing culture in BA, one of them being that the newsroom is subject to change, and second being that it is simply seen as a journalistic decision and not something that requires additional training.

As a supplement to the learning-by-doing culture, VG has different wikis with information about how to verify pictures, where you can find them and how to extract videos. Though, the domain expert does not go into detail about what these contains but explains that they are a collection of different internal tools in which some are password protected.

What a Journalist Should Know

While the domain experts' reasons that it is easy and quick to learn what is right to do, they suggest that there is a lot for a novice journalist to know about UGC. From creating and editing photos and videos, to how to spot and find good content, verify it, being familiar with tools and knowing the ethical guidelines of the newsrooms. In VG, it is important to know the editorial guidelines and know how to find and verify the visual UGC.

> One must be able to use many tools. One must know both the Code of Ethics and familiarize yourself with the ethical rules of the various newspapers. Also, you should know which tools to use to verify image material. Knowing which channels that can be used to find good user-generated content and how to contact the people who have generated it to get it verified. (VG)

By this, and in contradiction to the learning by doing culture, it is implied that it might not be a bad idea to support journalists as there are many things that a journalist should know, and this could benefit the newspapers. In addition, it is indicated that various newspapers have their own ethical rules to follow, and that there are norms or rules on how to contact contributors.

The BT domain expert considers some of the same things important to know, but also emphasizes that journalists should be familiar with what it takes to produce UGC when in the middle of an event, and how to edit such content. The interviewee states that it is central that you know how

> to make such content yourself. I think that is the most important thing. Try out the tools that exist, knowing what to do if you are in the middle of an event, to use the camera on your mobile, as simple

> as that. Perhaps also try out simple video editing, having tested Periscope, and learn a bit of Photoshop, such professional things. Otherwise, learn to search through social media to find the good stories. (BT)

Trusting UGC

One domain expert mentions that though there are great opportunities with UGC, there are some problematic aspects of amateurs contributing content to the news. The BT domain expert explains that when receiving images or videos from amateurs, journalists must evaluate if the content is worth buying and safe to publish.

> The challenge is how this image or video came into being. Was it made in a critical way? We must always be aware of that. For example, if someone has recorded a video of someone who does not know they have been filmed. (BT)

Further, the interviewee explains that when media uses hidden cameras or microphones, the decision is thought through and taken in advance, and then a discussion follows on whether to use and publish it.

With this the expert indicates that private individuals are more likely to be less aware of this and would record people who do not know they are being filmed or recorded. Therefore, journalist must carefully survey what has happened, asking journalistic questions and assess if the content is something they can use, and that UGC therefore must go through a thorough process before it can be considered published.

On the other hand, the BT domain expert also communicates that in practice there is no problem and compares UGC with how Wikipedia works. Further claiming that UGC is almost exclusively an enrichment for the media and journalism.

> In practice, there is no problem at all. Most people are incredibly helpful and nice. It works, even if you can imagine that you can misuse the system, it works in practice. A bit like Wikipedia. When it came, there were many who would not trust it because it was made by anyone. Everyone can write, can we trust anything that stands there? In practice, you can actually do that. A bit like that is it with user-generated content in the media as well. (BT)

The expert here explains that contributors can usually be trusted, which could indicate that most contributors of UGC do not try to trick newspapers, and thus UGC is mostly trustworthy, valuable and an enrichment for news media though it need to go through a thorough process first.

What Tool do the Journalists Need?

Ideally, the newsrooms need better tools to exploit the potential of all the undiscovered UGC. Newsrooms also receives content in several places, from different email accounts, mobile phones and social media. Therefore, it can be difficult to keep track of where to find the content and knowing if the content is used or not.

The BT domain expert explains that the existing tools are complicated and seldom work properly and wishes for a better tool to crawl social media to find the cases that are about to take off.

> I know that there are large sites abroad that have spent a lot of resources building their own tools to find the stories that are about to take off social media. I suspect that such places as Buzzfeed, for example, that they have quite advanced tools to find a topic that is becoming huge in social media. In this field, we are simply behind. (BT)

Similarly, the domain expert from VG explains that there is not good enough tools or enough employees to discover and exploit the potential of UGC, and ideally, they wish to use more such content.

In BA, an issue lies with where they receive UGC. The domain expert explains that they get content though several different channels and the content therefor ends up in different places. Further detailing that a large part of the system is still mail-based, and that they must search through numerous e-mail accounts to find content. The expert clarifies it is difficult for them to know whether an image is used before and where to find it, and that the image could be saved on someone's phone or be hidden away in an email.

With this it is suggested that newsrooms are mainly concerned with finding UGC in order to exploit the potential of it, preferably before the content is widespread across social media. In addition, it is implied that newsrooms and journalists have a challenge with dealing with received UGC and that they could benefit from an all-in-one system to manage UGC from different channels and keeping track of if its status.

Summary

There is lack of journalistic training regarding visual UGC, and the learning-by-doing culture is strongly integrated in the newsrooms. On the other hand, there is much a journalist should know about managing visual UGC. Though, there are some concerns

regarding visual UGC, it seems like the contributors can be trusted. Lastly, the newsrooms are especially concerned with finding UGC, and one expert disclose that there is a problem with keeping track of the UGC they receive.

Furthermore, it is elicited from the interviews that a journalist should know

1) how to find UGC in social media
2) the Code of ethics and ethical rules of various newspapers
3) which tools to use to verify image material
4) how to contact people to verify UGC
5) how to produce and edit photos and videos

These findings suggest what a journalistic training tool could focus on and functioned as a background for the requirements presented in section 4.2.5.

4.2.3. Design Workshop

A workshop was held with the ViSmedia-group to generate ideas and solutions to the wicked problems media faces with visual user generated content. User experience goals were also elicited in this process.

The participants were colleagues from the VisMedia-group, including academics in the field of journalism and HCI. The workshop was based on the findings from the expert interviews (see section 4.2.2).

Participants were given background information about user-generated content and practices within the chosen media companies. A discussion followed to ensure that the participants understood the goal of the ideation session; to come up with ideas regarding managing user-generated content in news media, and to further ideate these possible tools into plans for a future prototype.

With a common goal in mind, the participants took a few minutes to brainstorm writing their ideas on sticky notes. The group discussed and further developed the ideas and categorized them together on an idea wall as seen in Figure 4.1.

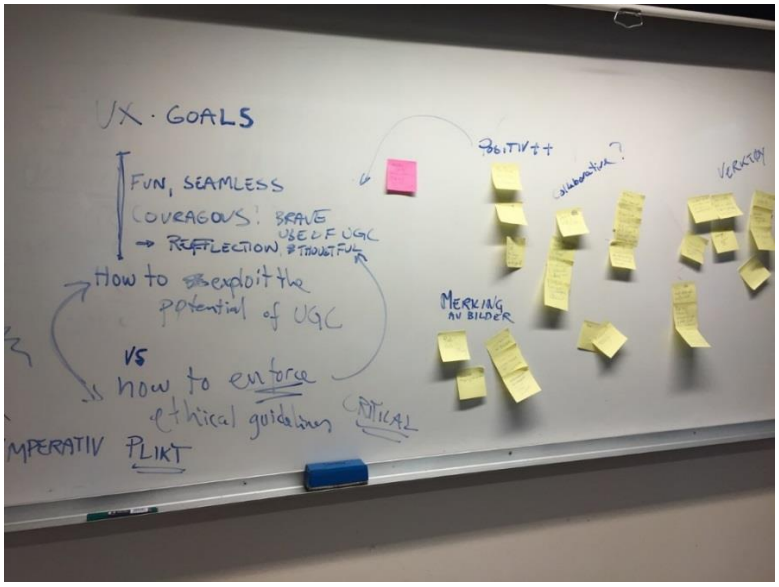

FIGURE 4.1: THE IDEA WALL FROM THE WORKSHOP SESSION

A summary of the ideas generated in the ideation session is presented in appendix F.

The method used in this workshop included general verbal discussions and categorizing of ideas by sticky notes. The workshop was documented by pictures and a written workshop report. After the session, the ideas were considered, and it was decided to create a web application where the media companies can add their own content such as guidelines and tools they use, emphasizing on training/supporting novice journalists in managing and verifying visual UGC.

4.2.4. Personas and scenarios

After the decision was made on what to create, the work began with creating personas and scenarios. They were used to establish the requirements for the system and to ensure that the users are considered throughout the developing phase. The personas were inspired by the literature presented in section 3.2.2 and 3.2.3, and the expert interviews as well as the previous workshop activity.

Two personas were created, one for each target user; the newly started, in training journalist, and the newsrooms designated content adding person. In the evaluation of VIBI the focus has been on the person in training, using the application and thus this persona (see Figure 4.2) and the associated scenario is presented here. The reminding persona can be found in appendix G.

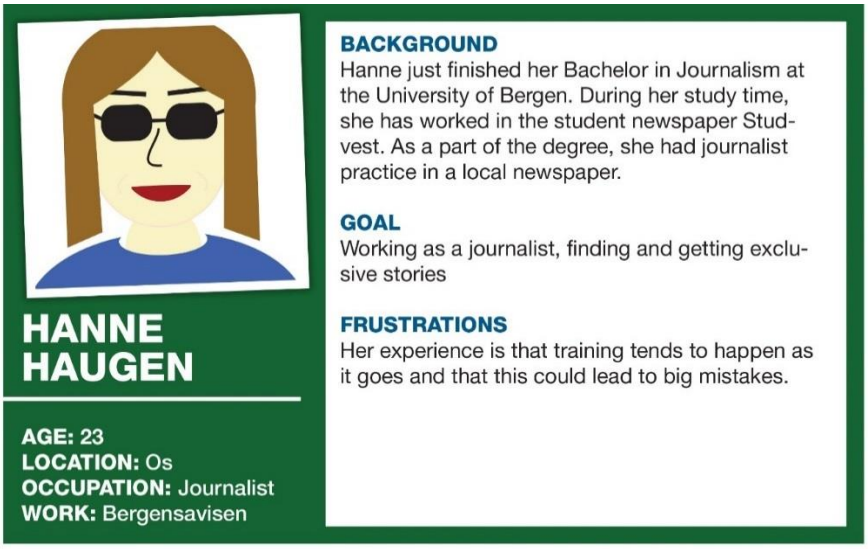

FIGURE 4.2: PERSONA ILLUSTRATING THE TYPICAL USER OF VIBI

The scenario accompanying the above persona was created to get a better understanding of the user and how VIBI could be used to support early-career journalists.

Scenario: Hanne has got herself a summer job in a local newspaper and is happy to have a foot in the door of the news industry. In a quiet moment in her week of training, she checks out VIBI to learn about how the newspaper is managing this type of content. She goes through the guidelines created by the newspaper and tries out the different resources they use. She is looking for visual user-generated content online but cannot find anything relevant right now. As she does not have any content, she reads through the verification guide on visual user-generated content to get an idea of what one should be checking.

The personas and scenarios has been subjected to changes throughout the design process. After establishing the target users in terms typical for a user-centered design process, the next step was to establish the requirements and goals for the design.

4.2.5. Requirements and UX goals

The requirements are based on the previous work conducted. The information retrieved through the expert interviews, the workshop session, and the personas and scenarios created.

The interactive system should provide its users with

- A simple training system on managing and verifying visual UGC
- News media's guidelines for user-generated content
- Links to available UGC related resources and tools
- A way for the newsrooms to continuously add/change the content

The systems user experience goals are to be considered useful, invite to reflection and thoughtfulness, encourage brave use of user-generated content, and the experience should be perceived as seamless.

The above requirements describing the system and its content was established as a sound base to start conceptualizing and concretizing the idea further.

4.2.6. Conceptualize

With the workshop session, personas and establishing requirements behind, the work began with sketching down the idea. Pen and paper was chosen to quickly get some sketches out as the main goal of the visualization was to create simple, and rough mock-ups as a base for further development and a way to concretize the idea.

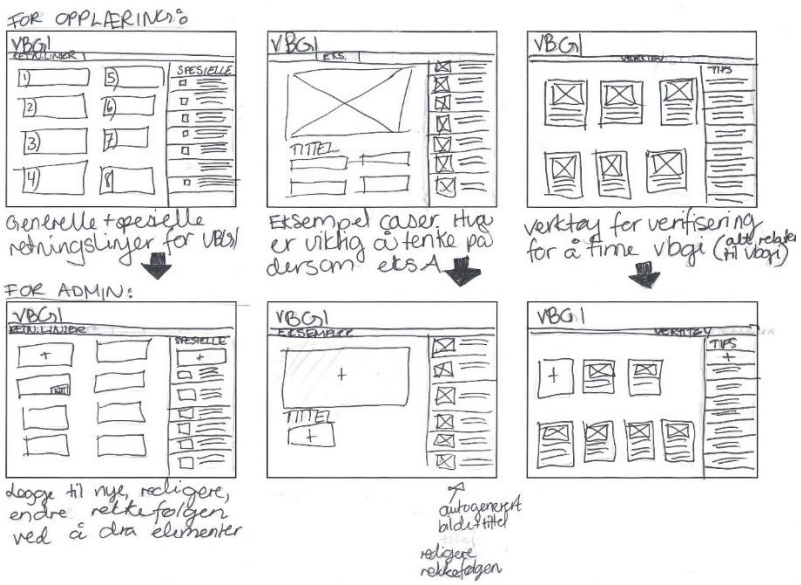

FIGURE 4.3: THE EARLY SKETCHES OF THE IDEA

As shown in Figure 4.3 the mock-up illustrates both the training and the admin perspective with the ability to add content. The first row displays the training view, and the second row the admin view.

In each row, the first square shows *general guidelines* that will be equal to all media organizations in Norway, and special *internal guidelines* that will be unique preferences and therefor only apply to the newsroom providing them. The second square displays an *example* section, providing example cases for the person in training to learn from. The third square presents the *tools* and resources that could be used by the newsrooms.

The idea is that the application will be delivered with some content that applies to, and could be used by, all news organizations in Norway such as common guidelines and resources. In addition, they can add their own content, adjusting the tool to their need.

The name of the prototype has changed several times throughout the development. The final version ended up being called VIBI, and the application will be mentioned by this name hereby and throughout the paper, though screenshots and drawings might state otherwise. With a concept in mind, the next step was to develop a high-fidelity web prototype.

4.3. Second Iteration

In the second iteration of the design process, a high-fidelity prototype was made to further develop the design idea. The main goal of this iteration was to create what Nyre (2014) describe as the material tool (see section 2.3), focusing on the technical aspect of the development. This section documents this second development phase of VIBI starting with presenting the development technologies and followed by the early web prototype.

4.3.1. Development Technologies

To achieve one of the requirements, the system must provide the newsroom with the option to create and publish content themselves, and for this project the content management system (CMS) WordPress was chosen.

WordPress is a well-known CMS used to produce websites and applications through core web technologies such as HTML, CSS, JavaScript, PHP and MySQL. As WordPress builds on these technologies they were used in the development of VIBI. In addition, the

component library Bootstrap and the grid library Masonry were used, both detailed in the subsection Libraries.

WordPress was favored as it is open source, it has thousands of plugins, and the researcher was familiar with WordPress prior to this research project. Further, WordPress provide the ability to assign different roles to different people, giving them various access levels, which is one of the product requirements. Developing a high-fidelity prototype using a CMS also provide the opportunity to test the system from the admin perspective, contributing content to VIBI. In addition, WordPress is based on themes and this makes it possible to change the functionality and look without altering the code or content, which was thought to be great for future development and changes. Using WordPress also provides a good basis for VIBI to easily be further developed for actual use in newsrooms, if that is desired.

Libraries

Bootstrap is an open source component library for web development that has a mobile first strategy in which optimize code for mobile devices first, and then scale up components as necessary. Bootstrap was chosen because it is seen a useful tool when you need to get a prototype built quickly, it also creates a professional look and feel and lay the basis for a responsive WordPress theme.

While Masonry is a cascading JavaScript grid layout library that places elements in optimal position based on available vertical space, like mason stones in a wall. As the WP posts might vary in length, Masonry was chosen as it does not have fixed height rows and optimizes the use of space by reducing unnecessary gaps inside a webpage.

4.3.2. The Web Prototype

Guided by the mock-up, this first version of the web prototype contained four different sections; examples, guidelines, internal rules and resources.

Again, as mentioned in section 4.2.6, the examples section consists of unique case examples journalists can learn from. Guidelines provide the person in training with rules and norms that apply to newsrooms, and internal guidelines display rules provided by the newsroom itself. The resources unit keep a tab on the tools and other resources that a newsroom could or should use when dealing with visual UGC. Which also could be extended by the newsroom by adding content. Figure 4.4 show an early version of VIBI from the admin perspective.

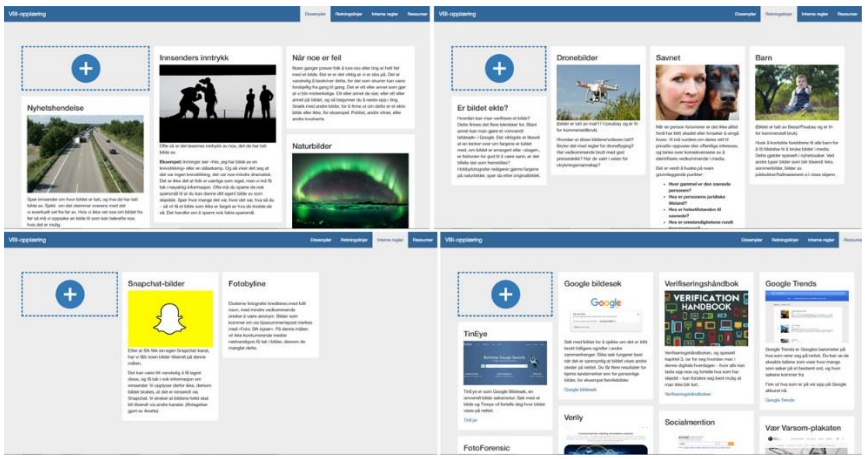

FIGURE 4.4: EARLY WEB-VERSION OF VIBI.

The evaluation of this version of VIBI consisted of testing that the technical aspects of the prototype worked as it should. This was a continuous process throughout development, and issues that arose were fixed and implemented as discovered.

To test the prototype properly, realistic placeholder or "dummy" content was posted in each section of VIBI (see Figure 4.4), filling it with tools, resources, general guidelines, internal guidelines and examples to check that the functions and design of the prototype worked properly. This made the application look 'real', and exposed potential problems and allowed for them to be repaired before testing the application with actual users.

4.4. Third Iteration

In the third iteration of this design project, the second version of VIBI was molded and implemented, and the content was created and added. This section documents this final development step of VIBI for this thesis.

There was a gap between the second and third iteration, and it was therefore considered essential to reevaluate the current version of VIBI. An informal evaluation was conducted through the practice of using one's own product.

Since there had been a rapid development in the research field of UGC in news media, and with the aim to make the right thing, the verification guide was added as a new system requirement.

The application was stripped down, temporary removing examples and internal guidelines to rather focus on the verification guide. The idea is that examples and the internal guidelines will return in the future for the newsrooms to be able to customize the content to their need in a larger degree than currently, adding their own examples to learn from and to showcase their guidelines. Though, the prototype is still an authoring tool as newsrooms can add tools they find useful as well as internal tools. They could also add guidelines, just not currently in a separate section.

Updated system requirements:

- The system should be a support system for managing and verifying UGC and provide a way for the media organizations to continuously add/change the content.
- The system must contain
    - news media's guidelines for user-generated content,
    - links to available UGC resources and
    - a guide to verify UGC

4.4.1. Prototyping the Verification Guide

First Draft News were contacted as they had developed a verification guide as a tool to help verifying photos and videos. Permission were granted to use their guide in this research project, and to use it as a source to create an interactive verification tool. This prototyping phase is therefore heavily based on Dr. Clare Wardle's and First Draft's verification guide for images, detailed in section 2.5.5.

To incorporate the verification guide into the high-fidelity version of VIBI, pen and paper were again chosen as quick way to explore different designs. Two designs were made, choosing to go forward with the one presented in Figure 4.5, after an informal evaluation with peer students in the field of information science and media studies.

FIGURE 4.5: SKETCH OF TRAFFIC-LIGHT VERIFICATION GUIDE

This time, color was added to the sketch to highlight the traffic light-based feature. The black square signals the selected answer, and thus the verification grade for each question.

Interactive Prototype

The next step was to make the drawn-up sketch into an interactive prototype to integrate into the existing design of VIBI. The First Draft's verification guide for images were translated to Norwegian, and the sketch made into an interactive version through the prototyping tool, Axure.

Axure RP 8 is a rapid prototyping tool aimed at web and desktop applications, offering to make interactions without coding and can generate HTML documents as outputs. Axure was chosen in order to quickly create this new addition to VIBI, and the ability to generate prototypes to html was a major reason for preferring this tool to others. In this way, the verification guide could easily be incorporated with the rest of VIBI's design as illustrated in Figure 4.6. Html-files were generated from the Axure prototype, and then the html tag <iframe> were used to display the generated files in VIBI.

FIGURE 4.6: VERIFICATION GUIDE INCORPORATED IN VIBI

4.4.2. Creating Guidelines

The application requires proper and relevant high-quality content to have meaning and to be evaluated by users, and thus interviews with domain experts, and creating content was a significant part of this research project. This section presents the process of creating journalistic guidelines to be used in VIBI.

I sought out to create the journalistic guidelines by extracting the newsrooms practices with UGC from the interviews with the domain experts. In addition, as BBC has their own UGC Hub (mentioned in section 2.4.1), BBC's editorial policy on UGC (BBC, 2006) were used as a supplement to the interview findings on cases where they added something to the topics.

The following guideline topics were found: Safety of contributors, laws and regulations, missing persons, children and adolescents, surveillance photos, drone footage, embedding

content, editorial decisions, privacy concerns, crediting, payment and contacting contributors.

Figure 4.7 below illustrates the process of creating journalistic guidelines.

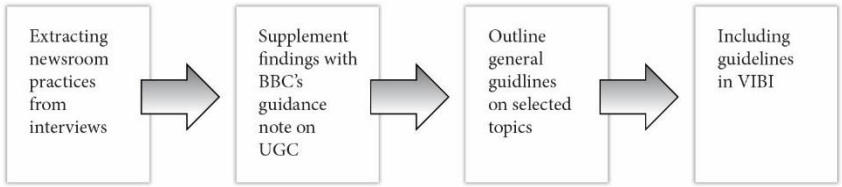

FIGURE 4.7: PROCESS OF CREATING GUIDELINES

The interview findings are simply used as a mean to create journalistic guidelines as input to the prototype and not all of the topics are covered in the prototype.

The newsrooms' practices on the topics are presented below, and the participants are referred to in form of the newspapers name or as domain expert from their respective newspapers. Again, the interviews were conducted in Norwegian, and quotes derived from them has been translated to English.

Safety of Contributors

In the subject of safety, the newsrooms see it as their responsibility to not encourage anything irresponsible and they are careful with asking people to contribute in dangerous situations. In addition, they should consider to explicitly tell contributors not to risk their safety.

VG clarifies that "we do not send anyone in our name to a place where there is a danger and do not encourage it either". Having the same practice, BA states that in dramatic situations "you have a responsibility to not ask or encourage anyone to do something irresponsible". With this, the experts reveal that the journalists see it as their responsibility to keep contributors from being irresponsible, and that contributor's safety are more important than getting UGC.

In addition, the BBC guidelines disclose that it should be considered when to tell people *not* to risk their safety. "This may be when we request material from members of the public

or where we are likely to receive it anyway and there is likely to be a safety issue, for example a bomb blast, or fire" (BBC, 2006, p. 2). Further, the BBC's guidelines details that it might be appropriate to remind the public that if they have risked their own or others safety, the contribution will not be used. In this way, BBC ensures that they do not encourage people to put their lives at risk firstly by asking them to be careful, and secondly, by letting them know that if life has been risked, the content will not be used.

These findings suggest that to not encourage audience members could mean to not use such content where the contributors has been irresponsible and put lives at risk. Further, it seems that newsrooms have a similar practice regarding the safety of the contributors and can be considered a general rule news media can follow.

Laws and Regulations

Regarding laws and regulations there is a consensus amongst the domain experts that it is not good practice to use images where laws and regulations has been violated. The domain expert from BT disclose that

> it has happened that private individuals have taken pictures and videos in such a way that it violates the rules of journalism, our profession. People who have almost gone into ambulances, and which obviously has violated the police's order to go away. (BT)

This is an example of that there can be issues with amateurs doing tasks formerly associated with professional journalism. Further, the BT domain expert clarifies that they do not use such images and that they will let the contributor(s) know such content is unwanted.

Backing up the norm in BT is BA. "If we get images that are not ethically correct to use – then we usually do not allow them to be used", the domain expert from BA clarifies and gives the example of a police action that turns out to be a suicide, continuing that in some cases it would be appropriate to inform the submitter about what they have taken pictures of and why it will not be used. The BBC guidelines substantiates the findings in BT and BA, that it may be necessary to remind contributors that BBC do not necessarily publish image material where laws and regulations has been broken.

Amateurs may not have the same means as journalists to check what a situation is about, and therefore may not be aware that it is inappropriate to document, and by informing contributors that such content will not be used, and why, may teach amateurs of what is and is not acceptable to do.

This suggests that newsrooms in general do not use images where laws are broken, and that newsrooms also should consider reminding contributors of this, and maybe even educating them in why so that they may not violate laws and regulations in the future.

Missing Persons

There can be many reasons to why a person is missing, and the newsrooms must investigate and make their own assessment of whether or not to use such content, and not trust that others have made the right decision.

BT explains that "there may be people who want to hide away, who have a reason to escape from home. There may be domestic violence or other things that you do not know", continuing that it is important to evaluate the story from the police to determine if these are pictures they can use. The expert states that the police do not decide which images the media shall use. Underpinning this is the BA domain expert, explaining that even if the police want names and images of missing people published, it is not certain that the newspaper should contribute to this. Further clarifying that with missing persons "there will be an assessment each time on how to manage the specific case". This shows that though the content comes from the police, journalists cannot rely on the police to do the ethical assessment for them but must investigate the case themselves to make a thorough evaluation of the content.

In VG, they have the rule that they do not use photos of a person that may have gone missing voluntarily, and the domain expert details that "the person should not be burdened with the picture being on the internet forever if they return. If there is a danger to the life of the person, then it is a completely different assessment". This shows that the newspaper considers if publishing a photo of a missing person is in the best interested of the person in question. E.g. if a person's life is in danger, they might publish the picture in order to get the missing person the help they need. On the other hand, having their picture online could affect their job searching in the future.

This indicates that journalists need to investigate and evaluate each case, even when coming from sources that might considered trustworthy such as the police. In addition, this also implies that each case is unique, that the advantages and disadvantages of publishing the picture and the best interest of the person missing, must be taken into consideration.

Children and Adolescents

There are things to consider, especially when children and adolescents are in the picture. Though, as a rule the journalist should contact the parents of all children in a picture, the practice is different, where it seems like it is mostly practiced in cases that are sensitive.

The domain expert from BA explains that the assessment is based on the setting of the content.

> In connection with Halloween or something like that, we often ask readers to send us pictures, and they also send them unsolicited many times too. Then it can be a bit like… Should you contact the parents of all the children in the picture? You really should. Or do you rely on the person who sent it in, saying it is okay? Sometimes we find it unproblematic that we trust that. It depends very much on the setting. Other times you just have to put yourself down and call and double check that the children in the picture are allowed to be in the newspaper. (BA)

Here the domain expert points to that each case are different, and thus there must be an assessment whether it is necessary to double check that there is parental consent, or if the content is of such non-controversial matter that this is not deemed necessary.

Substantiating this, the BBC's guidelines clarifies that if the circumstances are alarming they should have consent from a parent or guardian before using clearly identifiable images. The guidelines states that "the younger and more vulnerable the child, and the more sensitive the subject matter, the more likely it is that consent is essential", and emphasizes that even with all the consents, it must be considered if it is in the best interests of the child to be in the news. However, the guidelines also mention that exceptions from this can be when non-controversial images are submitted. This say something about how important it is to have a parental consent in alarming situations, and that the best interest of the child should be considered at all times. In addition, non-controversial image material can be of less concern to get parental consent.

These findings imply that there is a distinction between controversial and non-controversial images and the practices that are being applied to them. While it with non-controversial pictures may not be considered important to contact parents, it is vital to get parental consent with controversial and sensitive images, and the younger the children the more important it is.

Surveillance Photos

Regarding surveillance photos from the police, the newsrooms use them rather carefully as the police might not want to give out much information about the photo, who is in the picture and why they want to get in touch with the person(s).

The domain expert from VG makes it clear that they are careful with the use of surveillance images and identifications as they "must be reasonably sure that it is the right person" in the photos. Similarly, BT is cautious with surveillance photos of criminal acts where one can recognize people and states that the newspaper "shall not contribute to prejudge anyone." It seems that criminal cases can be difficult to evaluate, as newspapers must be sure they do not publish images of an innocent person or contribute to prejudging people.

Further, BT clarifies that although the police want them to publish surveillance camera pictures, they must make an independent assessment of it, evaluating the story from the police and determine if these are pictures they can use. BA disclose that the police might say that they are interested in and want tip about a person on a surveillance photo but might not want to say much about the case. For example, if the person is the perpetrator they are looking for, or a witness. This shows that there might be police cases where the police want newspapers to publish pictures, but does not want to, or cannot, give information about why. In such cases it can be difficult for media to evaluate if they should publish the image material.

Substantiating the findings in BT and VG, the domain expert from BA clarifies; "we cannot trust the police to do the job for us. We have to do our own job and evaluate each case against what we are obliged to hold". Therefore, before publishing UGC, newspapers must vet and verify the content themselves in order to know that it is according to their standard.

Drone Footage

The newsrooms should consider how the content came into being as there are many rules a drone pilot must follow, and thus it is important that they carefully assess whether it is ethical for them to use. On the other hand, the content can be of such a high news value they chose to dismiss ethical aspects and publish the content. The BA domain expert discloses that there is much to consider regarding drone footage.

> "With drones I will always be extra careful. Is this done safely in relation to air traffic? Has the recording of this video taken place properly? Has the drone been in the way of, for example, rescue work?" (BA)

This shows that there could be many potential pitfalls when considering using image material from drones, and that journalist must navigate through this carefully.

Further, the domain expert from BA explains that it can be difficult for rescue crews to deal with drone pilots filming from a distance. "To a person, you can just tell them to go away. If it is a drone, then it becomes a challenge to simply communicate to the person who controls the drone that this is not desirable." (BA) This can create challenges and issues for rescue workers, and such content therefore might not be ethical to use.

The VG domain expert states that they are very careful to ask people to fly a drone for them if they believe it could affect the safety of people who are in the area, and that "if laws and regulations related to drones are violated, the person will not be sent to do so". The same practice is found in BT. "We avoid using drone images taken in a way that clearly violates the rules. For example, you should not fly over people." (BT) In general, it seems like the newsrooms are careful when using drone footage as there are many rules to consider and therefor many pitfalls.

However, the VG expert disclose that "if there are very exclusive pictures, then we need to assess whether it is correct to use the pictures or not", and similarly the domain expert in BT clarifies that "in general, never say never. News may be so big and important, and of such great value that we would break the rules". While the newsrooms are careful when using drone footage, one could say that if the content is of high enough newsworthiness, it will be used even if rules are broken in the process of making.

These findings show that there are many things journalist must check properly before buying such content, and a part of the challenge is how the image or video came into being. Further, it is implied that the journalists also in this case must investigate if it is ethical to use the footage. However, it seems like if the content is of high newsworthiness, it is likely that the footage will be used even if rules for drones were violated.

Embedding Content

Even though news media can claim fair use and simply embed content it seems that journalists usually ask permission to use content from social media.

When embedding content from sources such as Twitter, Instagram and Facebook, VG clarifies that they must check the authenticity of the content by "[talking] to the sources and do a reverse image search. Ethical assessments on whether the material should be published must also be made". The same practice is found in BT, and the BT domain expert states that although they are legally permitted to use the content, they usually ask for permission, explaining that "many will be surprised if they suddenly see their own little YouTube-video, which they thought was half-private, appearing in the news." This shows that though the newsrooms simply can embed content without contacting rightsholders, evaluation of the content is necessary and contacting rightsholders can be seen as both essential and common curtesy.

However, there are exceptions. The VG domain expert explains that they carefully check who has the copyright, but that they sometimes embed videos claiming fair use (Norwegian: "nyhetsretten"). This is substantiated by the BT domain expert clarifying that they can claim fare use "if the video shows something that has huge public interest, and we cannot get hold of the one who has filmed". By this it is clear that if the content is valuable enough to the newspapers and to the public, and they legally can use it, to publish the content itself is considered more important than the approval of the rightsholder(s).

This suggests that though news media can use content without contacting the content owner, it is common curtesy and practice to do so. It is implied that it is important to authenticate the content by contacting the contributors, but if the newsworthiness of the content is high, content might be used without the content owner's knowledge.

Editorial Decisions

Who makes the editorial decision on whether or not to use an image or a video depends on the content and the situation. The minor and least controversial decisions are made by the journalists, while the more in-doubt or the more difficult cases, the higher up the editorial ladder the case goes before a final decision is made.

The VG domain expert disclose that "many decisions can be made by journalists, together with the news chief or news manager", giving the example of censoring a license plate or another non-controversial assessment. The expert further explains that

> "it depends on the scenario whether it is the news manager, the editorial manager or the editor in chief who makes the final decision. During a running news story, the editor in chief is often included in the decision to use a material." (VG)

From this, it seems like many cases are easy to assess and are simply taken by journalists together with their closest news manager. Further, the more controversial and difficult to assess cases requires higher level of editorial power.

The same practice is found in BA were the domain expert explains that "if I am sure, I will make that decision. If I am in doubt, then it is the news editor who makes that decision. If there is any doubt, then the responsible editor makes the decision". In addition, it is common practice in BA to discuss the case with other people in the newsroom in order to figure out what "BA" thinks about the subject. This substantiates the VG findings, that the more controversial the case is, the more people are involved in the decision-making process, adding that discussion is important to find the meaning of the newsroom and the editorial board as a whole.

The domain expert from BT states that "if we are unsure if we can use something then we do not use it. It is that simple", elaborating that they consider the usual press ethical rules and that the same precautions apply to user generated content as for their own images. VG substantiates this as they do not distinguish between UGC and their own images and apply the same journalistic process on UGC as their own produced content, and in addition have a simple rule of; when in doubt, do not use it. This is not surprising, as newspapers must provide trustworthy and reliable news, and if they are unsure after a thorough investigation of the content, there might be good reasons as to why they should not publish it.

These findings imply that who makes the final decision depends of the case, and since each case are different, there does not seem to be a rule other than when in doubt, ask some higher up in the editorial ladder who can make that decision. Lastly, when in doubt, simply do not use the content.

Privacy Concerns

Even if some news organizations choose to identify people that does not mean that others will do the same as they must enforce their own ethical line. The domain expert from VG gives an example of a situation:

> Norwegians who have been arrested abroad and are identified elsewhere, while we have not identified them. You can say that those photos are easily accessible to anyone when they are online, but VG has its own ethical line to follow. (VG)

Though people can be identified and all over other online news sites, that does not seem to affect if VG choose to identify. Similarly, the BBC's guidelines states that:

> if we feel that a picture or video has breached someone's privacy or if it is clear they did not wish their image to be captured, we may decide it is either not appropriate to use the material or we may take steps to protect the subject's identity (BBC, 2006, p. 2)

This shows that BBC takes into consideration if they feel privacy has been breached, or if it is clear that being captured on photos or video was not welcomed by the person(s), and either ensure the person(s) privacy by not using the content or e.g. anonymizing it.

These findings imply that newsrooms, again, seems to have their own ethical guidelines to follow and that the choice to identify or use something might be unrelated to others decision.

Crediting

The newsrooms have a similar practice of crediting contributors. Newspapers use the contributors name unless the contributor wish to be anonymous, or if there are other reasons to hide the identity. In those cases, the newspapers actually refer to that the content is a user contribution by hiding the identity of the contributor behind something equivalent to "Photo: Reader's Footage".

In VG they credit the contributor as the contributor prefers it, and similarly does BT, asking the person it they want his or her name credited. As for BA, they have the practice of using the name of the person who has taken the picture, unless the person wants to be anonymous or there are other reasons why his or her name should be anonymized. There seem to be a rule that newspapers use the contributors' names unless there is any reason not to.

The BA domain expert clarifies that if someone want to be anonymous it is usually fine, and that other times they want to keep their source a secret; "We are quite hard in competition with each other, and there are some online newspapers who would like to protect their source from being contacted from other media because they want him for themselves." Here the expert points to that the hard competition between newspapers could lead to the anonymization of contributors in order to keep exclusive content to themselves.

Similarly, the domain expert from VG remarks that in some cases it is not desirable to print the name, giving the example of criminal activity or other things contributors might not want to be associated with. This shows that sometimes anonymizations of contributors are in the interests of the newspaper, while it other times are what is best for the contributors.

In these cases, the newspapers hide the contributor's identity, and the tree newsrooms all have a similar practice. BA uses the byline "Foto: Leserbilde" which translates to "Photo: Reader's Image". Similarly, submitted images or videos are marked with "VG-tipser", the newspaper's name plus "tipper". BT also have a practices equivalent to BA and VG, marking the image "Foto: 211-tipser", referring to their tip-number. This shows that when the contributors identity is hidden, it is clear from the byline that the content is UGC, in contrast to using the name of the contributor which says nothing about whether or not this is a processional's work.

However, the BT domain expert states that "often it appears from the image itself that it has been taken by a citizen journalist. It's authentic, it's on the spot, it's non-professional". This could mean that journalists do not see it as important to label UGC as user contributions. On the other hand, the domain expert from BA say that;

> When I think about it, maybe there should be a 'reader's image' behind it [the byline], so that it appears that it is UGC. There may be people disagreeing with me, but it may be a good idea to clearly label things. (BA)

Substantiating this is the BBC guideline, clarifying that it is important to "ensure that material from members of the public is clearly labelled, so that our audiences know it has not come from the BBC or another news organization" (BBC, 2006, p. 5). This shows that though it may not be a practice yet, it should be so that the readers could be informed that this is not the newspaper who has produced it.

Further, the BBC editorial note clarifies that "special care must be taken if we suspect that material has been supplied by a member of a lobby group or organization with a vested interest in the story, rather than a disinterested bystander" (BBC, 2006, p. 5). While, domain expert from VG explains that "it is important that we make a good and objective assessment of all the images we get in and try to uncover if anyone has an agenda" and elaborates that such images will not be used. Examples being grocery stores sending pictures of competitor's mistakes, or images where PR-agencies are involved. This say something about the importance of being careful with, and label content from third party organizations to ensure audience understands its origin.

These findings suggest that newspapers usually use the name of the contributor, unless there is a reason to hide it, and that they do not knowingly label UGC as UGC, but that when hiding the identity of the contributor they in fact actually do this. Further, it is implied that perhaps it should be considered to label UGC more clearly so that readers to understand that this is not produced by professionals in the newspaper. In addition, it the findings imply that content from third party organization also should be labeled.

Payment

Newsrooms receive free content, but also find it important to pay for good contributions, and the newsrooms all have their own rules of payment.

BT states they as a rule pay for all photos received from news events that they use, explaining that "it is important for us and for our readers that we spend the money in the most reasonable sense and get the best possible journalism for the money. User-generated content is obviously a part of that solution". Here BT recognize the importance of UGC and are willing to pay for content that benefit them and their readers.

The domain expert from VG disclose that people think it is fun to get their picture in the news which leads them to usually get content free of charge. From this it seems like contributors do not necessary demand payment but enjoys contributing and thus could give VG content of great news value free of charge.

Whereas, the domain expert from BA claims that "there are some newspapers that have a rule that they pay 500 NOK for every picture used" and reveals that they have their own policy with guidelines regarding how much to pay for what types of pictures.

All in all, these findings suggest that payment practices can vary from newspaper to newspaper, and that they all have their own rules for what to pay for and how much. In addition, it is implied that newspapers can get UGC free of charge simply because people think it is fun to have their image material in their news. On the other hand, it is suggested that it could be wise to pay for UGC as it is important for the newspapers.

Contacting Contributors

When dealing with UGC there is many things a journalist must consider both before and while contacting contributors, as contributors do not seem to have the same awareness as professionals as to whom can give the permission to use the content.

BA states that people do not always know that the person who has taken the picture, is the only one who can give news organizations the permission to use it, and that "they are not entirely aware, not always at least, that the persons in the picture must give their approval.". Giving the examples of "Yes, my father has taken the picture, but just use it", or "No, I'm not the one who has taken it. It's a colleague of mine, but he said it was okay". In those cases, they ask for the contact information to the rights holder to check if they are aware of the situation and if they are permitted to use it. From this it seems that it is important that the journalists double check that the submitter of UGC in fact is the right holder as the contributors do not consider it an issue that friends or relatives where the ones who took the image. Further, the submitter might not have asked the person in the photo if it is ok that they send it to a newspaper.

In addition, BA clarify that if a journalist is in doubt about an image, he or she should ask the contributor if the image, typically nature scene, is edited in any way and ask to get the original image. This reveals that it is important that the newspapers get ahold on the original image material in order to ensure the image is not tampered with in any way.

Further, the domain expert explains that "if we do not know anything about the image beforehand, we must find a source that can confirm the story", giving the example of an image from a car crash, where the police are called to check if the information from the contributor is correct. Confirming the story could be very important when the journalists themselves are not at the scene, and thus must investigate if what the contributor say is correct and not their interpretation of it.

VG disclose that before they contact possible contributors they perform a reversed image search and may check it against the Scanpix picture database. Then, they contact the rights holders and explain who they are and that they are calling from VG. If someone for example has posted a photo from a particular location in Paris, they might contact the person via Facebook or Twitter. Then they check if the person actually possesses the copyright and ask if they can use and possible buy the image. The final step is to go through the procedures for buying content and try to get the agreement in writing, preferably by email, which

details the rights they get. If the person is under aged, they contact the guardian. Here, the VG domain expert reveal that there could be some ground rules to follow for when contacting contributors and the steps leading up to this.

In BT, they often receive pictures from the readers before their own people arrives at the scene and they "call the person who has taken the picture and gets some details about the incident". In this way, they can start verifying the image material while also getting quotes and other useful information from the contributor in order to write a case. The next step is to agree on payment, and if everything seems to be ok "we will use it right away in our online newspaper and showcase the event", the domain expert explains. BT prefer to call the contributors as it is easy to avoid misunderstandings, and from the conversation it will be clear what the incident is about, and the price will be negotiated and agreed upon. Then the contributor receives a form they must complete and return in order to get their agreed upon payment. This shows that calling the contributor could be the best way to contact contributors.

This shows that the newsrooms have similar practices regarding contacting contributors, and thus the findings could be used to suggest a guide (presented in section 4.4.3) that journalists can use when dealing with UGC and contacting contributors.

As previously explained, the newsroom practices functioned mainly as a basis and understanding for creating content to the prototype. Figure 4.8 shows the guidelines created in the prototype.

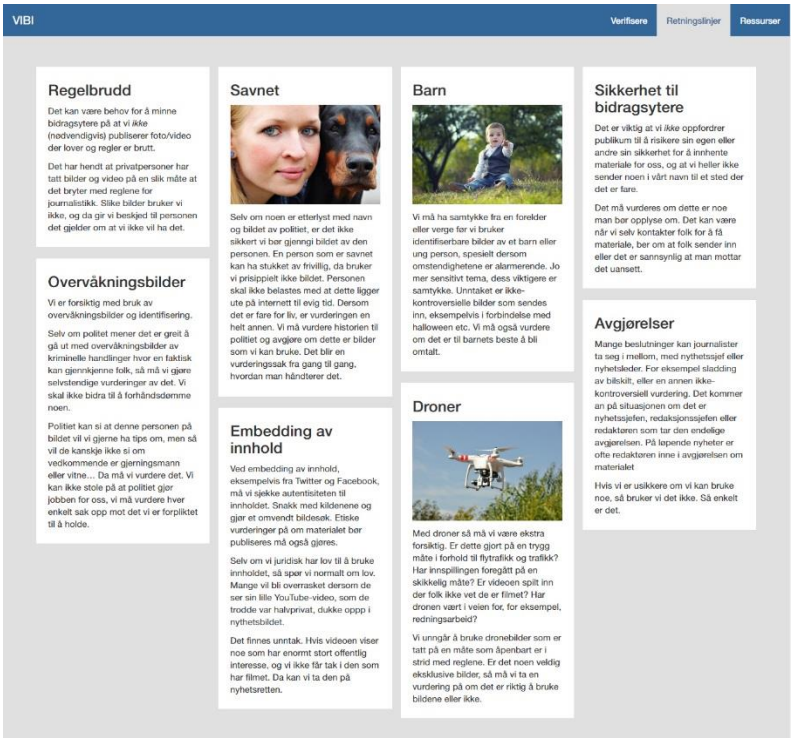

FIGURE 4.8: GUIDELINES IN VIBI

4.4.3. Guide for Contacting Contributors and Verifying Images

With basis in interview findings, I also sought to create a guide for when contacting the contributors, and the steps leading up to this. However, this is not currently used in the prototype.

The process can be split into 3 parts:

1) Before contacting potential contributors, one must evaluate the content.
    - Is it relevant? Is it interesting?
    - Is the content real? Is it from a credible source?
        - Do a reverse image search and check against picture databases
2) Then, contact (preferably call) the person and ask journalistic control questions.
    - Has the submitter actually taken the photo? Are the contributor or people in the picture under aged?
        - Get contact info to rights holder and necessary permissions.
    - Where is this and what is it a picture of? Who is in the picture?
        - Contact other sources to confirm story.
    - Is the picture the original?

        - Get the original if colors etc. is tampered with.
3) The last step is to clear the rights and agree on payment.
    - Can we use it? How can we use it? E.g. is it ours exclusive. Does the content owner understand the range of it? Do they want to be anonymous? Does he or she want payment?
        - Get the agreement in writing.

4.4.4. Finding Tools and Resources

The last section, or page, in the prototype contains tools and information that are valuable in the process of finding or verifying visual user-generated content. Some of the tools are extracted from the expert interviews while others were discovered during the tool and literature search.

Tools and resources mentioned in the interviews

- Periscope and Telescope
- Facebook Graph Search
- Echosec
- Google Image Search, Google Trends and Google Alerts
- TweetDeck
- Photoshop
- The Code of Ethics (Vær varsom-plakaten)
- Unnamed non-commercial internal tools

The VG domain expert also mentions that the photo department has a few tools they use but is unsure of which ones. During the tool search The Verification Handbook, Social Mention, TinEye, Verily and FotoForensic were discovered and later added to VIBI.

The tool search and interviews were conducted in the fall of 2015, and as the development in this field is racing, there is sure to be a lot more out there.

The tools and resources were then added to VIBI, where their use is described, purely as examples of what the application can contain (see Figure 4.9) as newsrooms are free to customize the content as they see fit.

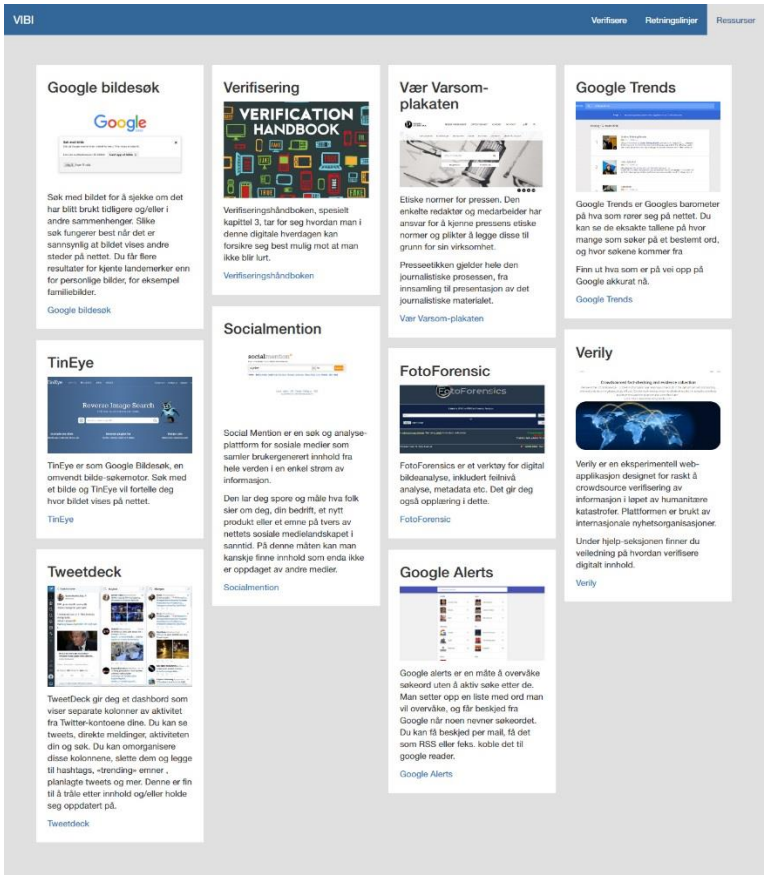

FIGURE 4.9: RESOURCES IN VIBI

4.5. Chapter Summary

This chapter presented the development phases of VIBI, describing the development method and the first, second and the third (and final) iteration of the prototype.

The first iteration consisted of defining the problem space, establishing requirements and sketching the idea down, while the second iteration concentrated on creating and implementing a fully functional web prototype, and making sure technical issues were found and solved. Lastly, the third iteration included some alterations to the design and focused on the creation of the content.

Chapter 5 Evaluation

Having constructed VIBI as a prototype aiming to support novice journalists with the important tasks of managing and verifying user-generated content, it was necessary to evaluate the usability of the application. This chapter describes the method of evaluation, followed by presentation and analysis of the results.

5.1. Evaluation Method

The evaluation consisted of both quantitative and qualitative methods. First, the participants were given two tasks to ensure interaction with prototype in order for them to evaluate the usability of VIBI, and the participant's interactions were observed by the researcher. Then, the participants were given a questionnaire to complete, and an interview followed to further explore the potential issues. A pilot study of the user-testing was conducted to quality check the actual study, making sure it was viable and identifying and fixing potential issues before executing the real study.

The sample size is relatively small, consisting of six participants. However, they are all in the field of journalism and UGC. The participants in the study can be divided into three categories and were either 1) journalist students in their 6th and final semester in the journalist program at the University of Bergen and currently in practice, 2) recently graduated, early-career journalists or desk employees, or 3) experienced freelance journalists and desk employees working in Bergen. The gender division of the participants were 50/50, and as the participants work history is not extensively documented, and the students and recent graduates therefore might also have prior relevant experience.

The participants were recruited based on their skills and knowledge about journalistic processes and UGC. The participants were recruited through the journalist program at UIB, through ViSmedia, or were contacted based on recommendations from other participants and people working in media organizations.

The evaluation was conducted using researches computer and took place in a convenient place for the participants to accommodate their busy schedules. The majority of the evaluations took place at Media City Bergen (MCB), during or straight after work hours.

Participants received a gift certificate as a thank you for their time and effort, though only informed of this post evaluation. The user test consent form is found in appendix H.

5.1.1. Tasks

The participants were given two tasks to ensure interaction with all the aspects of the prototype. The cases consisted of constructed situations that could arise in a newsroom, and the participants answers are not relevant for this study.

The tasks consisted of

1) Verifying a story and attached image
2) Assessing an image of a child

In case 1, the image used was of candy looking drugs used in a fake news story that spread on Facebook and would quickly be found through a reverse image search.

In case 2, the image was of a child on the beach, where it in the associated caption it emerged that the person sharing this picture with various news media through Instagram, was the child's grandma.

The tasks given to the participants are found in appendix I.

Observations: To capture the details of what the individual participants did, observations were made by the researcher. The users were directly observed while performing the specific tasks and the data were recorded in forms of notes.

5.1.2. Evaluation

After the participants had completed the tasks, they were given a system usability scale (see section 3.4.2) for a quick review of the application's usability. As previously explained, the scale was not intended to diagnose usability problems, and therefore the participants were also questioned about their perception and experience of VIBI through a semi-structured interview. The SUS used in this evaluation is found in appendix J.

The purpose of the interviews was get the participants to further elaborate and clarify their SUS answers and to get a better insight into the participants' experience of the application. A basic script was created to reassure that the same topics were covered with all participants (included in appendix K).

5.2. Analysis of Usability

This section presents and analyses the findings in relation to the system usability scale. This includes observations, SUS-results and interview findings.

Table 5.1 below presents the participants SUS scores, grouped together by participants level of experience.

TABLE 5.1: PARTICIPANTS' SUS SCORES

SUS scores

Experience	6th semester journalist students		Recently graduated (< 1-year experience)		Experienced Freelancers	
Participant no.	2	3	1	4	5	6
SUS score	75	82,5	97,5	97,5	95	82,5
Average result	**88,33 / B / Good**					

Table 5.1 shows that VIBI overall get a relatively high score, with the average result of 88,33. Though this is based on a small sample size, it might be worth noting for future development and research that the participants generating the highest SUS scores are the recent graduates.

Though the average SUS score is high, one participant (#2) generated a lower score that the rest of the participants. Following the percentage ranking suggested by Sauro (see section 3.4.2, Figure 3.2) the SUS score of 75 is about 65 in percentage, and not a great result. However, the average SUS result of 88,33 lies within the top percentage, translating to about 97 percent.

Further, Figure 5.1 and Figure 5.2 below, presenting the participants answers to each of the SUS statements, reveals that this participant does not give any of the statements the top score, and did not feel as confident as the other participants when using the system (Q9) and also deviates from others by feeling that there is some inconsistency with the system (Q6). Since this participant in general does not seem to find VIBI as usable as the others, it

could be interesting to talk to the participant again. On the other hand, a low score from one participant do not necessarily indicate much.

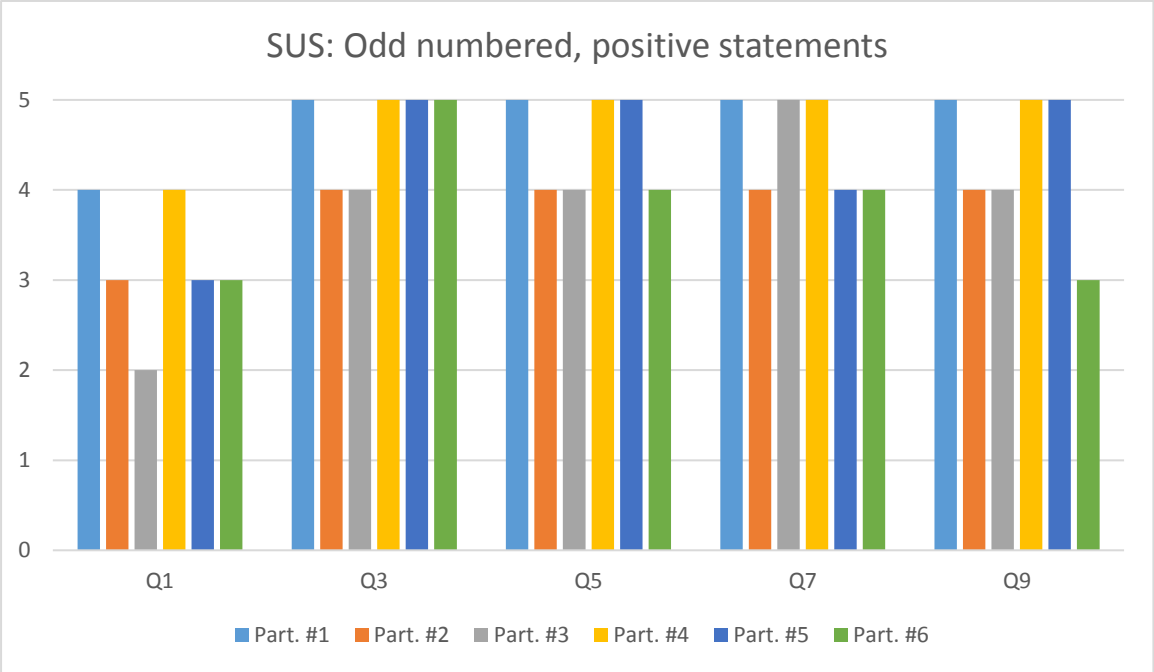

FIGURE 5.1: PARTICIPANT'S ANSWERS TO **POSITIVE** SUS STATEMENTS. 5 BEING THE BEST SCORE "STRONGLY AGREE", AND 1 THE WORST SCORE "STRONGLY DISAGREE". Q1) I THINK THAT I WOULD LIKE TO USE THIS SYSTEM FREQUENTLY. Q3) I THOUGHT THE SYSTEM WAS EASY TO USE. Q5) I FOUND THE VARIOUS FUNCTIONS IN THIS SYSTEM WERE WELL INTEGRATED. Q7) I WOULD IMAGINE THAT MOST PEOPLE WOULD LEARN TO USE THIS SYSTEM VERY QUICKLY. Q9) I FELT VERY CONFIDENT USING THE SYSTEM.

As one can read from Figure 5.1, Q1 - whether they would like to use the system frequently, stands out from the rest of the statements, and the participants giving Q1 a score of 3 or less were asked why they would not use the system frequently. Where some would use it use it when necessary, others felt they already were trained. One participant explains that "when it is applicable to use it, I would like to use it" (#2), saying that these situations might not be occurring often. While another participant mentions experience as a reason not to use it often and that VIBI might not be suitable for the hectic environment.

> "I would not have used it so often because things often happen quickly, and I have worked so much with it [UGC] that it goes automatically. I feel confident in the use of images, and that I have the critical eye". (#5)

Observational findings substantiate that the more experienced participants already have, or feel they have, the knowledge to managing UGC without VIBI, revealing that the most experienced participants did not use the guidelines and resources to solve the tasks given. In addition, the two participants agreeing they would use it regularly, are the recent graduates, which seems to be reflected in their calculated SUS scores presented in Table 5.1.

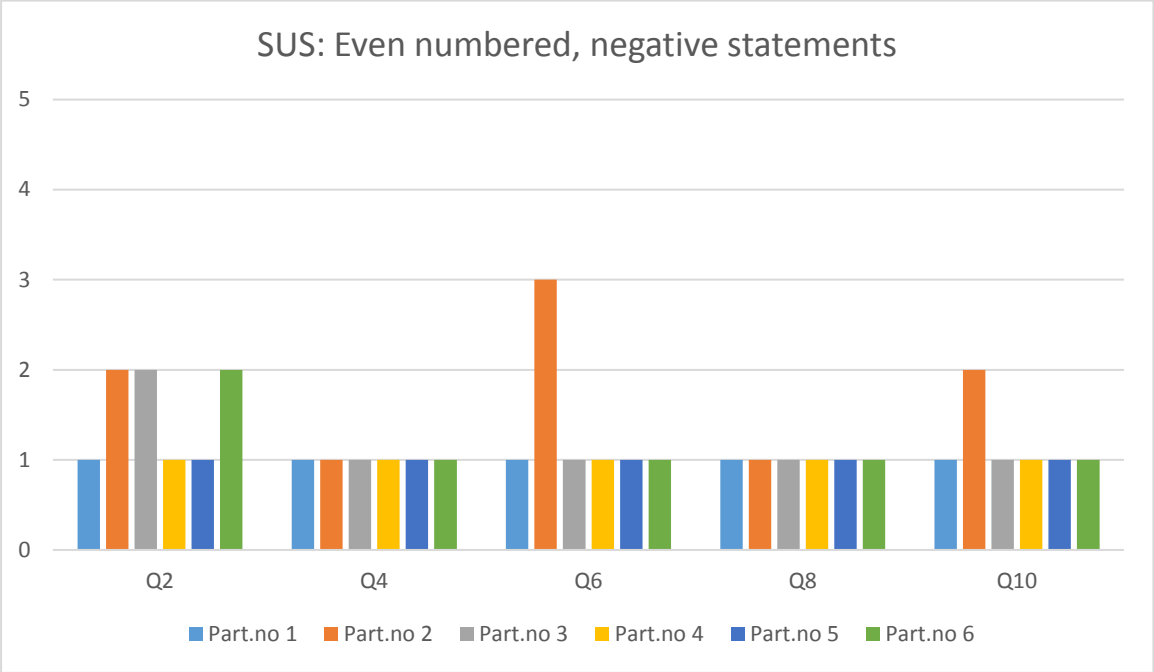

FIGURE 5.2: PARTICIPANT'S ANSWERS TO **NEGATIVE** SUS STATEMENTS. 1 BEING THE BEST SCORE "STRONGLY DISAGREE" AND 5 BEING THE WORST SCORE "STRONGLY AGREE". Q2) I FOUND THE SYSTEM UNNECESSARILY COMPLEX. Q4) I THINK THAT I WOULD NEED THE SUPPORT OF A TECHNICAL PERSON TO BE ABLE TO USE THIS SYSTEM. Q6) I THOUGHT THERE WAS TOO MUCH INCONSISTENCY IN THIS SYSTEM. Q8) I FOUND THE SYSTEM VERY CUMBERSOME TO USE. Q10) I NEEDED TO LEARN A LOT OF THINGS BEFORE I COULD GET GOING WITH THIS SYSTEM.

5.3. Analysis of Users Experience

This section gives an account of the participants' experiences of using VIBI, presenting the findings and the analysis from interviews and observations.

First it was explored what the use of VIBI could lead to, and all the participants believe that by using such a support tool journalist become more aware that the content is created by non-professionals and more critical to if the content is safe to use. The participants experienced that this visualization of the processes related to managing and verifying UGC

reminded them of their job and made them question the credibility of the content and the sources. Participant #6 explains that "you often become at a loss for an answer when being asked so many [verification] questions. Then you wonder if it is safe to use." Adding to that, another participant state that "you do not think about the verification steps without seeing them" (#1), and one participant (#2) mentions that VIBI reminds you of that you are a journalist and specify that it is important to obtain the border between the journalist and the consumer.

In addition, the participants believe that the system leads to journalists feeling more certain in their decisions when evaluating UGC. Participant #2 elaborates that "to many people having guidelines and resources, having a template to follow, will make them more certain", and that by having guidelines journalists gain a greater control over what is and is not safe to use. This is substantiated by several other participants thinking that journalists would become more certain that the content they are using are correct and safe to use. However, one participant is a bit more sceptic to the system and argue that "you should not trust the system blindly either, but it seems like a good training tool to learn to verify" (#5).

The participants were asked if they felt the system encouraged reflection of UGC, were the participants all say that VIBI encourages journalists to reflect on the use of the content and how the content came into being. Participant #1 elaborates that it leads to thoughts about "what context you use a photo and whether it is a snapshot of a paparazzi, or if people are aware that they are being photographed", and by this explains that it leads to considerations of how UGC came into being, and if it is ethical to use it in the context intended. While participant #3 point to the verification guide and that "you make a more thorough assessment if you do such a check on all images", and another participant (#4) emphasis that VIBI makes the tasks a journalist normally does on autopilot, or should do on autopilot, clear.

Further, the participants all found the option to customize content as essential and useful, and the majority of the participants reasons that that newsrooms have different norms and preferences. Though it is a small sample size, it could also be worth mentioning that one participant sees it as a quick task to produce content to VIBI. Participant #6 find this option necessary because "from personal experience, there are different guidelines in different newsrooms. Some are stricter than others" and explains that that "the online news desk could quickly create such bunks [posts] with things [guidelines and resources] that we agree upon".

In addition, they were questioned if they thought VIBI could be used by experienced journalists and desk staff, where 5 of 6 believes that even experienced desk staff and journalists can learn from using a system such as VIBI. Participant #1 explains that even though you are experienced and know the Code of Ethics, that you should look at the checklist to ensure the content is out of the grey area, and reasons that "TV2 recently used a picture of the wrong person, so I do not think it has anything to say if you are experienced or not". While participant #3 feels that verification is something that is taken too lightly today, and emphasis that "you can always learn something. Learn to be more careful. To think systematically about whether an image is real".

Whereas the reminding participant is unsure if journalists will learn something new, and instead believes they will be reminded of knowledge they already have. This is substantiated by participant #5 that specifically mentions that VIBI can help journalist to remember their newspaper's guidelines.

5.3.1. Difficulties of VIBI

There are a few things the participants feel VIBI is lacking or could improve on. 4 of 6 participants mentioned difficulties with the verification guide. Substantiating this is the observational findings revealing that 3 out of 6 participants asked questions about the verification guide and how it worked while performing the tasks.

Three participants felt the guide lacked an explanation as it took a while to understand it, and two of them would prefer a descriptive text to accompany the verification guide. Participant #1 explains that this is necessary when you have not used it before but emphasizes that this is not important when you are familiar with the guide.

While two participants mention that the verification guide is text heavy, difficult to remember and time consuming to go through. One of them explains that "the explanations or the text on them [the color code choices] take time to read and remember" (#3), and that "the text of the verification guide could be more compressed to speed up the verification [process]" (#3) making it more effective.

Lastly, it could be worth mentioning that one participant would like to have folders, categories or filters to sort out the resources. The observational findings also revealed possible areas of improvement on the resources page, suggesting that it might be unclear

where the links leads to, and that it might be beneficial to have the whole post as a link. Then again, it is a small sample size and further testing and investigations are needed.

5.3.2. Positive Sides of VIBI

On the other side, several of the participants describe VIBI in a positive way, mentioning that VIBI is an interesting idea and nice to have in a training phase (#5), a useful tool (#2), that works well (#6), and the system is found to be straight forward (#5).

In particular, the traffic light color scheme is perceived as a great way to communicate the level of verification of an image. Participant #4 explains that there is a clear yes or no verification with the traffic light color scheme, and that it is nice to have a verification score to consider. Confirming this is participant #3, saying that "the color codes in the verification guide were easy to understand". Further, one of the participants found the verification guide very useful. "I liked the verification part very well – it is easy to be uncritical" participant #4 explains and continues that the verification guide would be used daily in order to feel safe.

The guidelines were mentioned to be valuable, and the shortness of them considered to be positive. One participant states that "the guidelines for my workplace are not available anywhere, and I had found it useful if they were gathered like this" (#4), though it is mentioned they might not be used as much in the long run. While another participant emphasis the shortness of the posts. "I like that there are short texts on the guidelines, even though one could write a master's thesis on them", participant #1 states.

To finish, one of the more experienced participants (#5) feels that the resources are a positive input claiming that this is something not many knows about.

5.3.3. Suggestions for Further Development

Two of the participants suggested that the system could perform automatic verification checks in the future. Participant #6 explains that it would be "cool to be able to upload the image in the application and get the metadata" in order to save time. Which also participant #3 would like to have the ability to do, either by taking the picture into VIBI, or having a link to image search in the verification guide. Similarly, he suggests that "perhaps one could automatically do a photo search on the image and get metadata".

5.4. Chapter Summary

This chapter presented the evaluation of VIBI and the results and analysis of the findings. First, the evaluation methods used was described, then the analysis of the usability, and ending with the analysis of users' perception and experience of VIBI.

The prototype was found to be highly usable, but with room for improvements. One participant in particular deviated from the others and generated a lower SUS score. Users experienced that VIBI made them more aware of their job to assess UGC, encouraged reflection of how the UGC came into being, and believe the system will make journalists more certain if the content is or is not safe to use. In addition, it was discovered that the participants felt VIBI could benefit experienced journalists as well, and that the possibility from newsrooms to customize content according to need was seen as a necessity. However, some difficulties were found. Some participants explained they felt the verification guide lacked an explanation, and others mentioned that the guide was text-heavy, difficult to remember and time consuming to go through. On the other side, the participants found VIBI to be a useful, straightforward tool, and several found the traffic light color scheme as a great way to suggest verification level. Lastly, one participant found the guidelines to be useful, while another liked that they were short and to the point.

Chapter 6 Discussion

This chapter provides a discussion of this study's research question:

How to design a tool supporting novice journalists to manage and verify visual user-generated content?

To answer this research question, interviews were conducted with domain experts to find out how newsrooms worked with visual UGC in order to define problem space and gather requirements. Then a prototype, VIBI, was created through an iterative process (documented in Chapter 4) inspired by value- and content-oriented approaches within HCI research as presented in Chapter 3. Finally, the usability and participants experience of VIBI was evaluated as presented and documented in Chapter 5.

The chapter is organized as followed. First, the early research is discussed, followed by the design and evaluation of VIBI as an answer to the research question. Then, a presentation of suggestions for future researchers, finishing with a brief section of discussing research through design.

6.1. How to Support Novice Journalists

The interviews with the domain experts showed that that journalists would like a tool to find user-generated content, which is in line with one of the issues presented by Diplaris et al. (2012), that a challenge for journalists lies with discovering trending topics for further investigations.

However, an important implication of the findings is that a journalistic tool should not only support the journalists with how to find content, but also support with the verification process regarding which tools to use and how to verify content by contacting contributors, as well as emphasize the Code of Ethics and the newsroom's ethical rules. Which correlates to one of the key journalistic needs, presented by Diplaris et al. (2012), that journalists need tools that support them in the verification process.

The analysis of the newsroom's practices shows that different types UGC requires different assessments, and that there seem to be similar practices on the big topics within the newsrooms, while the details might vary. These findings imply that some guidelines are general, while others internal preferences, rules and norms to the news organization, and are in line with the findings of Tolmie et al. (2017) that editorial preferences can impact how UGC is managed. Some of these practices resulted in guidelines for the prototype.

Further, the research findings show most cases of visual UGC are unique and requires an individual assessment, and many cases also requires a thorough journalistic investigation even when coming from sources such as the police. However, it is mentioned that there are some common pitfalls when it comes to visual UGC, and these might function as examples journalists can learn from as experimented with in the early version of VIBI. It also appears that the newsrooms have a somewhat similar practice of contacting contributors, which was developed into a guide for how to verify content by contacting contributors, though not currently implemented in VIBI.

In addition, it was found that the newsrooms have a learning-by-doing culture. This way of learning is present within the three different newspapers, indicating that this might also be the case in other newsrooms which correlates to former research by Wardle et al. (2014) that newsrooms employees lack training.

As to why a learning-by-doing culture is largely present in the newsrooms, the findings are not conclusive but merely implies that it could be because of the rapid change and development in the newsrooms as BA mentions, and that there must be situations to learn

from as VG remarks, or as BA indicates that it is considered a journalistic decision, and thus specific training on UGC is never received. Some of which share similarities with Wardle et al. (2014) findings that that managers often are unaware of the complexity of the working with UGC and employees therefore do not receive training, and the findings of Tolmie et al. (2017) that news desks are subject to change.

These findings imply that journalists are simply being thrown into the difficult and important tasks of verifying content while there is a lot they need to know in order to deal with UGC, which could be extra tough for in-experienced journalists. It is thus considered important to particularly support the novice journalists and desk workers dealing with visual UGC. In an attempt to do so, and as a counterpart to the learning culture currently present in newsrooms, VIBI was created.

VIBI aims to provide early-career journalists with a better understanding of verifying visual UGC, of the newsroom's guidelines, and the processes and resources linked to UGC. As the development in the field was racing, it was investigated what other researchers did, and First Draft had created a verification guide for photos (see section 2.5.5 and appendix A), and with their permission this was included in this research project.

First Draft might be considered closest to this project amongst the related work, as they offer a broad range of educational courses and resources, emphasizing support and training of journalists and the public. While other tools such as INJECT (presented in section 2.5.4) also could be used in training of journalists, INJECT focus on idea generation to broaden and diversify journalists reporting. Several of the related tools emphasis finding as well as verifying content. PHEME (described in section 2.5.3) emphasize truthfulness and detects how rumors emerges and unfolds in social media, whereas SocialSensor (see section 2.5.2) crawls social media for UGC and links newsworthy content to the mainstream media, supporting journalists (and others) with trustworthy, relevant material in a context. Lastly, the Reveal Media Verification Assistant (presented in section 2.5.6) offers to assist with verifying images by using image tampering detection techniques, analyzing metadata, and by including current verifications tools and methods such as Google reverse image search,

However, VIBI stands out from these tools as none of the tools are authoring tools and allow for customization of content in the way VIBI does, and neither do they provide ethical, journalistic guidelines to follow. In addition, all these tools could be considered resources for the journalists to use, and thus be included in VIBI. Which means that as new

tools are being developed, they can be added to VIBI so that VIBI can continue to be a relevant support for novice journalists.

6.2. Usability of VIBI

Conducting the user evaluation was a chance to exam VIBI with the target users, investigative the usability and diagnosing potential issues. Former research by Diplaris et al. (2012) shows that one of the challenges in journalism is that tools and interfaces should be intuitive and easy to use, thus the usability was important to test.

Overall the participants found VIBI to be highly usable, as the usability test resulted in a resulted in an average SUS score of 88,33 or 97 percent. However, there are some room for improvements as the analysis of SUS responses and results presented in Table 2.1, Figure 5.1, and Figure 5.2 exposed some concerns.

First, findings show that VIBI will not be used frequently by 4 of 6 participants which does not have to indicate much, as further investigations imply that the participants would use VIBI in appropriate situations, but that these simply may not occur frequently. On the other hand, the recent graduates, agree that they would use it regularly, indicating that VIBI is more valuable and useful to them.

Second, one participant differs from the other participants, generating a lower SUS score and not giving top score to any statements. This finding indicates that this participant could be an interesting candidate for further investigations, though Lazar et al. (2017) argues that in usability testing one is looking for flaws that is a problem for the majority of the users.

6.3. Users Experiences of VIBI

The participants believe that using VIBI makes journalists more critical to if the content is safe to use, and several participants experienced that VIBI made them more aware of their job to assess UGC. It was mentioned by participant #1 that “you do not think about the verification steps without seeing them”. Which imply that VIBI makes them think about the credibility of the UGC and how it came into being more often, making them more aware that this content is not yet a journalistic content. In addition, it implies that the visualization of the verification processes can function as a reminder to journalists of the important tasks and questions to ask.

Further, the participants think VIBI would make journalist more confident in their decision whether to use an image material or not. It is specifically mentioned that having guidelines and templates to follow can provide a certain security for some journalists. This suggest that such a tool could support journalists with managing and verifying visual UGC. Though, one participant argues that one should not trust the system 100% either.

It was also found that the system encourages the participants to reflect on user-generated content. One of the participants mentions that the system makes you think about the context in which the image is used and how it came into being, while another one emphasis that through VIBI the journalistic processes are made visible. These findings imply that VIBI function as a reminder and support for the journalists by visualizing the journalistic processes.

In general, the participants seem to believe that experienced or not, you can always learn something, and if not, the system remind of things you already know. This indicates that not only could VIBI assist early-career journalists, but that it is likely that also the more experienced ones could benefit from being reminded about the journalistic process and ethical considerations, that is, if they would use it.

The connecting thread between these findings seems to be that the visualization of the journalistic tasks related to managing visual UGC can functions as a reminder to journalists, and in addition VIBI might support them in various degrees based on the journalists experience and knowledge.

As previously discussed, the different newsrooms might have different needs regarding the content in VIBI, implying a need to customize the content. The participants validate that the guidelines vary from newsroom to newsroom and find the ability for the newsrooms to provide content essential and useful. Which indicates that a tool to be used in various newsrooms should provide its users with the ability to customize content.

The participants experienced a few difficulties with the prototype. First, the verification guide is considered text heavy, time-consuming and difficult to remember. Participant #5 state VIBI would not be used often due to the high-paced news environment. This indicates that the verification guide, and a journalistic system in general, needs to be suited to situations where things happens quickly. Former research validates this finding. Similarly, Maiden et al. (2018) found that their journalistic tool INJECT should provide information quickly. This is further substantiated by the findings of Tolmie et al. (2017) that the fast

pace news production requires a journalistic tool to rapidly provide exactly what the journalists are looking for, and of Diplaris et al. (2012) that a core journalistic need is to quickly find answers to questions they have related to a story.

Second, while performing the tasks and familiarizing with VIBI, fifty percent of the participants asked questions about how the verification guide worked. These observations imply that the verification guide is not self-explanatory, and that this part of VIBI is not easy to use. This is substantiated by three of the participants, explaining that they lack an explanation for what to do, and how the guide works and suggested that a descriptive text or landing page to solve the issue.

In addition, one participant expressed a need sort the resources implying that they can grow to be quite many, and difficult to sort through after a while.

On the other hand, the participants seem to perceive the verification with color codes and a verification score as clear, indicating that a color code scheme is a good solution to display 'verification grades'. Participant #3 states "the color codes in the verification guide were easy to understand".

Other aspects such as the guidelines and resources were also mentioned to be valuable as well as the shortness of the guidelines. Which confirms the findings from the expert interviews that this is something journalist must know, and thus should be a part of a support system for journalists. That the shortness of the guidelines was appreciated, could simply imply that they are adjusted to the journalistic need of getting information quickly as previously discussed.

Finally, the participants describe VIBI as an interesting idea, a useful tool, nice to have in a training phase, that the system is straight forwardly and works well. These findings imply that though maybe not completely there yet, VIBI is certainly on its way to become a well working support system for journalists.

6.4. Potential Improvements of VIBI

As discussed, some of the participants felt the verification guide was difficult to understand. To accommodate this one can, as suggested by the participants, include a descriptive text to assure the users know what to do. To further ensure that the users understands the guide, one can enhance the design to become more intuitive, making the purpose and interaction

clearer and the guide easy to use. In addition, on could make sure the verification score is visible at all times through the verification process, and not just at the bottom.

Further, some of the participants found the verification guide to be text heavy and time-consuming. To make the process quicker and adapt the guide to the hectic newsroom environment, one could take a step back and evaluate if this guide is optimal for the Norwegian newsrooms by exploring different structures, designs, and texts. Or, one can take a different route, as suggested by some of the participants, making the verification guide automatic e.g. perform an automatic image search, and display metadata, ticking of some of the verification steps automatic.

Lastly, one participant expressed a need sort the resources. To accommodate this common sorting options could be provided, dividing the different resources into categories.

6.5. Limitations of Study

Though the domain expert interviewed have years of experience in the field, and the newsrooms selected have different range of coverage areas and are all of different sizes, the study is limited as this is a small sample size of three.

In addition, the evaluation of VIBI is limited in the sense that the cases were constructed, and not actual instances. The images used in the tasks are found quickly through a reversed image search, and thus not all aspects of the verification guide are covered. The participants also had a limited interaction time, and the cases might not be sufficient to test all the aspects of the application properly. For future testing it is therefore suggested to do an “in the wild” field-trial in a newsroom to use the guide in actual cases.

Further, the evaluation is limited to be evaluated by six participants, though, in the relevant field of journalism and UGC. It also should be mentioned that the guidelines created are not evaluated nor approved by news organizations.

Lastly, the evaluation is limited as the admin user perspective is not tested in this evaluation. As the newsrooms can provide some content themselves, it should be investigated if this is something they are willing to do.

6.6. Requirement Implications for a Journalistic Support Tool

Based on the discussion, there are some requirements implications for what a journalistic training tool that aims to support journalists with the verification process should include:

1) how to find UGC in social media
2) the Code of ethics and ethical rules of various newspapers
3) which tools to use to verify image material
4) how to contact people to verify UGC (see guide in section 4.4.3)

In addition, the support tool should provide information quickly, in a user-friendly matter and allow for customization of content.

6.7. Design Implications for a Journalistic Support Tool

The discussion also led to design implications for future design researchers on how to design a tool to support journalists.

1) Newsrooms are subjects to change, which can be challenging to design for as what the journalists need to know, and be trained in, may change. Keep this in mind when designing to ensure the tool can adapt to a changed need.
2) Keep in mind the high-paced environment present in newsrooms. It is considered a core need that a journalistic tool quickly delivers exactly what the journalists need, when they need it.
3) Consider using traffic light color scheme to imply level of verification.
4) Consider that different newsrooms can have different editorial needs and preferences, and design with customization of content in mind.

6.8. Research through Design

For it to be possible to evaluate the quality of this research through design project, the four criteria presented by Zimmerman et al. (2007) are followed. Throughout this thesis the *process* has been documented by presenting and reasoning the methods and theories used in this project. A literature review was conducted and presented (in section 2.5) to demonstrate the prototypes advances, or *invention*, to the research community. This research differentiates from related work as this research project focus on supporting *novice* journalists, provides journalistic guidelines, and a selection of resources to use which can

include related work, as well as contribute empirical findings on the First Draft verification guide. In addition, the tool stands out as this is an authoring tool that allows for customization of content. Through this paper it appears why this work is *relevant*, and thus why this state should be preferred. To emphasis *extensibility*, the design research work is well-documented and presents suggestions for future research and for when designing support tools for journalists. In addition, this design could be extended to teach journalist students about managing visual UGC before they even enter the newsrooms.

6.9. Chapter Summary

This chapter presented the discussion of the research question leading to a brief discussion of the prototype in relation to related work, followed by the discussion of the evaluation of VIBI. Then, the study's limitations were presented, before listing requirements suggestions and design implications, ending with a discussion of the study's RtD.

Chapter 7 Conclusion

This research presented has studied how newsrooms work with visual user-generated content and explored how one can support early-career journalists dealing with UGC and verification of image material, leading to the creation of the journalistic support tool, VIBI.

The motivation for this study was to ensure that consumers of news are presented with trustworthy, reliable content through supporting novice journalists with the important, time-consuming tasks of managing and verifying visual user-generated content.

VIBI was designed as a fully functional web prototype using the research through design framework. The prototype was a result of domain expert interviews and a workshop with ViSmedia and included use of personas and scenarios. The web application was mainly created using core web technologies in order to make a WordPress theme, in addition the prototyping tool Axure was used to quickly add the verification guide to the prototype.

Finally, the prototype underwent usability and user experience evaluation. The evaluation studied the usability and the participants experience of VIBI by having target users test the prototype and complete a system usability scale. This was further investigated by interviewing the participants about their perception and experience of using the prototype.

Overall, the systems SUS score and feedback was good, and suggests that such a tool is worth continuing developing. However, the feedback also indicates that further evaluations, design exploration, and technological enhancements are necessary to optimize VIBI for the hectic newsroom environment. Lastly, the application is only as good as its content and thus a closer collaboration with media organizations is considered beneficial, and maybe even required.

This study revealed potential requirements for what a journalistic training tool should contain, suggesting that it should support journalists with finding and verifying content, teaching them about verification tools and how to verify by contacting contributors and providing the ethical rules of the newsrooms. The system should be suited to the high-pace newsroom environment, providing what the journalists want quickly and allow for customization of content. In addition, the traffic light color scheme was well-liked as a way to suggest level of verification.

VIBI stands out from the crowd of related tools as it focusses on supporting novice journalists, provide general newsroom guidelines, and function as an authoring tool, allowing for newsrooms to add and customize content, adjusting the tool to their preferences and needs. What also makes it different is that VIBI includes currently available online tools and resources to highlight the resources already out there that newsrooms and journalists can use and might not be aware of exists.

VIBI aims to provide early-career journalists with a better understanding of verifying visual UGC, of the newsroom's guidelines, and the processes and resources linked to UGC. Though, maybe not completely there yet, VIBI is certainly on its way to become a well working support system for novice journalists.

To finish off, there will always be journalists students and early-career journalists taking their first steps into a newsroom, eager to do a good job, afraid of asking to many questions and making big mistakes. Being welcomed by a hectic news environment demanding fast delivery of quality, newsworthy content, and being thrown into the important tasks of finding, evaluating, and verifying user-generated content.

7.1. Future work

Emphasizing the content, VIBI could be developed in closer collaboration with Norwegian media organizations, evaluating the journalistic guidelines in a focus group and come up with and agree upon general guidelines for news media to follow. In addition, original thoughts of having visual UGC examples or cases the journalists can learn from, and internal newsroom guidelines, could be worth re-exploring.

Furthermore, it could be explored if it is feasible to create an automated verification check to lessen the time the verification process takes and meet the needs of a high-paced newsroom.

In addition, VIBI could be extended to function in education to teach journalists students how to find, manage and verify visual user-generated to preparing them for the newsrooms hectic environment and learning by doing culture.

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Appendix A – Verification Guide

Appendix B – Assumptions

Assumptions

The following assumptions about visual UGC in newsrooms were made:

- The sources of UGC are regular people submitting content, police, social media and other newsrooms (through collaboration). Types of UGC found in news media is content submitted through competitions/encouragement, personal pictures (e.g. wedding, baby, birthday, class photos, team photos), photos/videos of news events and photo/video taken by readers when the newsroom is unable to set it up themselves (e.g. asked to take a photo take a selfie).
- With breaking news, it is important to be first with covering the story and visual UGC is frequently used first in breaking news as it often is captured and sent from the scene of the incidence. More importantly it is to have a picture of the scene as pictures draw attentions to the article and traffic to the news site. For accidents, fires and other incidents where the man in the streets is present, the media often encourages sending images / video from the events. Media must send a journalist / photographer to the events, and without submitted pictures, it may take a long time for them to get pictures to attach to the story. In some cases, the story is also written/made from the newsroom only. In these cases, it is even more important to get pictures from others. In assessments of this type of user-generated content time is a factor. The verification process consists of contacting the submitter, get some quotes about the matter and contacting other sources to confirm the story. The first image or video the newsroom get from an event is usually posted right the way, independent of the quality. Later, if this content is of relatively poor quality it is replaced it with better, and possibly more pictures from the newsrooms photographers or journalists. With some content there are doubts about whether to use it or not. Then, first content considered safe is chosen while the content in question is being discussed amongst the newsrooms staff.
- Newsrooms considers journalistic if the content should be anonymized (e.g. car sign, face, identifying features), if linking the content with already published content makes it identifiable, if families have been informed in case of injury and death, if permission is granted from parents where children is involved, if the image is authentic and if the content is newsworthy.

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- Whether or not to censor or use images from the police such as surveillance images can be a difficult decision to make. Newsrooms gathers all information they can get about the matter, discussing the case and a decision is made by the editorial board.
- Newsrooms does not tag their UGC as "UGC", but credit content owners with a byline such as "Photo: Ola Nordmann". Sometimes, newsrooms hide the contributor's identity to keep other news organizations from contacting them, or to keep the contributors safe.
- Images tagged with the news organizations hashtag will be used and embedded as the journalists see fit without contacting the contributors, unless the content becomes a big case or will be used in a way not expected of the contributor. Photos of children collected from social media using media companies own hashtags is considered 'parental approved' by using the companies' hashtag.
- If a newsroom receives images or video which is of high newsworthiness it will be used even if the content owner may have violated laws and regulations.
- The price of the content is also essential to the decision-making process. Editorial staff may consider questions such as how important the content is, if it is worth paying for, what is included in the price and if the content is exclusive. UGC is purchased and paid for if it is of good news value and / or exclusive for the news organization, but it is preferred for it to be free of charge and use.
- In general, employees of newsrooms are mostly "trained" by "learning-by-doing", and there is a lack of training regarding visual UGC.

Appendix C – Interview Guide

Ekspert intervju

Intervjuguide

Fase 1 – Rammesetting (5 min)

Masteroppgaven og ViSmedia

Masteroppgaven min omhandler brukergenerert innhold i media og er inn under et forskningsprosjekt innen visuelle teknologier, etikk og journalistikk (ViSmedia). ViSmedia - "Responsible adoption of visual surveillance technologies in the news media" skal foregå over fire år og ledes av professor Astrid Gynhild. ViSmedia skal utforske etiske aspekter ved visuell teknologiutvikling.

I masteroppgaven min skal jeg undersøke hvilke utfordringer og prosesser media har med visuelt brukergenerert innhold. Med brukergenerert innhold menes her bilde og video tatt av folk som ikke er profesjonelle journalister/fotografer og som er uten tilknytning til nyhetsorganisasjoner. Informasjonen samles inn ved ekspertintervju, og skal brukes som innputt til et interaktivt system for opplæring rundt visuelt brukergenerert innhold.

Intervjuet vil bli tatt opp. Du kan velge å fremstå som anonym eller ikke. Dersom du velger å være anonym vil alle personopplysninger bli behandlet konfidensielt. Student og veileder vil ha tilgang til personopplysninger. Intervjuet blir tatt opp, transkribert og anonymisert. Et ark vil inneholde koblingsnøkkel som kobler sammen navn og nummer på intervjuene.

1. Er noe uklart/har du noen spørsmål?
2. Vil du være anonym?
3. Har du mottatt informasjon om studien og er villig til å delta?

Fase 2: – Erfaringer (10 min)

1. Kan du fortelle navnet ditt, hvor du jobber og hva din rolle/stilling er?
2. Hva er din bakgrunn?
3. Hvordan ser en vanlig arbeidsdag ut?
4. Hva tenker du når jeg sier visuelt brukergenerert innhold?
5. Kan du fortelle litt om hvordan dere jobber med BGI? *Gi gjerne eksempler*
    a. Prosessen fra a til å?
    b. Kan du gi eksempler på dette?
    c. Hvordan oppleves dette?
    d. I en stresset situasjon?
    e. «Breaking news»?

Fase 3: - Fokusering (20 min)

1. På hvilke ulike måter får dere tak i BGI? Hva/hvem er kildene?
    - ❑ Finner i sosiale medier
    - ❑ Oppfordre til innsending/deling
    - ❑ Finner folk på nyhetsstedet (tilfeldig journalist)
    - ❑ Fra nyhetsbyrå (Reuters/AP)
    - ❑ Fra politiet
    - ❑ Overvåkningskamera
    - ❑ Konkurranser/hashtag

a. Hvordan går dere frem i de forskjellige tilfellene?
b. Hvilken fremgangsmåte vil du si er oftest brukt hos dere?
c. Hvordan brukes BGI?

2. Hvilke utfordringer har dere med utvelgelse og bruk av BGI?
   a) Hvordan håndterer dere disse?
   b) Er det noe du savner ved håndtering av BGI?
   c) Hvordan håndteres vanskelige/uklare vurderingstilfeller?
      I. Hvem tar den endelige avgjørelsen?
   d) Har dere havnet i uheldige situasjoner ved bruk av BGI?
   e) Har du fått opplæring i håndtering av BGI?
      I. Hva bestod denne av?
      II. Hvordan oppleves dette?

2. Finnes det klare etiske og journalistiske retningslinjer for visuelt BGI?
   a) Har dere egne normer og regler utenom værvarsom-plakaten?
   b) Hva må visuelt BGI gå igjennom for å bli godkjent/verifisert?
   c) Har kilden noe å si på hvordan dere vurderer BGI?
   d) Hva er viktig å tenke på i vurderingen av:
      I. Dronebilder?
      II. Overvåkningsbilder?
      III. Bilde fra politiet?
      IV. Bilder fra sosiale medier?
   a) Hvordan er praksisene for trivielle versus ikke-trivielle bilder?
   b) Hva med BGI fra nyhetsbyrå som Reuters/AP? Sjekker dere opp i kildene?

3. Hva blir gjort etter at dere har funnet BGI dere vil bruke?
   a) Hvordan kontakter dere innholdseierne?
   b) Hva opplyser/spør dere eierne av BGI om?
   c) Hvordan inngår dere kontrakt med innholdseierne?
   d) Hva innebærer en slik kontrakt? Hvilke rettigheter får dere?
   e) Hvilke tanker har du om betaling for BGI?
      I. Fordeler/ulemper ved betaling av BGI?
      II. Hva bør man passe på?
      III. Har det hendt at noen har satt seg i en farlig situasjon for å få betalt for BGI?

4. Kan du fortelle om praksisene for kreditering og merking av BGI?
   a) Hvordan tror du dette oppleves for innholdseierne?
   b) Hva bør brukerne få vite om BGI?
   c) Merking av bilder fra folk med en agenda?
   d) Hvordan merkes/krediteres BGI fra nyhetsbyrå som Reuters/AP?
   e) Hvordan er praksisene rundt BGI i de forskjellige mediene? TV, nett, papir?

Fremtiden:

5. Hvordan burde man ideelt sett håndtert BGI?
6. Hva bør en journaliststudent kunne om BGI? Gode råd?
7. Et verktøy som hjalp til med prosessene/opplæring rundt BGI – Hva skulle det vært?

Fase 4: - Tilbakeblikk (10)

1. Oppsummere funn (ta opptak + notater)
2. Har jeg forstått deg riktig?
3. Er det noe du vil legge til?

Appendix D – Consent form

Forespørsel om deltakelse i forskningsprosjektet

«Visuelt brukergenerert innhold i media»

Bakgrunn og formål
Formålet med studien er å innhente informasjon om praksiser rundt visuelt brukergenerert innhold i media. Problemstillingen er som følger; *Hvordan kan man, gjennom design av et interaktivt system, støtte desken/journalister/journaliststudenter (i å få kunnskapen) til gjøre nødvendige etiske og journalistiske vurderinger når de velger ut visuelt brukergenerert innhold / bilder fra publikum?* Studien er en del av en mastergrad ved Universitetet i Bergen, som igjen er innunder forskningsprosjektet ViSmedia - "Responsible adoption of visual surveillance technologies in the news media". ViSmedia skal studere muligheter og dilemmaer med visuell teknologi i nyhetsmediene. Prosjektet skal foregå over fire år, og ledes av professor Astrid Gynhild.

Det forespørres om du vil delta på bakgrunn av din erfaring med brukergenerert innhold i media.

Hva innebærer deltakelse i studien?
Deltakere i studien vil bli intervjuet. Spørsmålene omhandler praksiser og utfordringer ved visuelt brukergenerert innhold. Dataene blir registrert i form av lydopptak og notater. Innsamlet data vil bli brukt som innputt til et interaktivt system.

Hva skjer med informasjonen om deg?

A) Du ønsker å være anonym:
Alle personopplysninger vil bli behandlet konfidensielt. Student og veileder vil ha tilgang til personopplysninger. Intervjuet blir tatt opp, transkribert og nummerert (anonymisert). Et ark vil inneholde koblingsnøkkel som kobler sammen navn og nummer på intervjuene.

B) Du vil IKKE være anonym:
Deltaker vil kunne gjenkjennes i publikasjonen i form av navn og stilling/firma.

Prosjektet skal etter planen avsluttes 1. juni 2016. Datamaterialet vil bli anonymisert ved prosjektets slutt.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil ikke opplysningene bli brukt.

Dersom du ønsker å delta eller har spørsmål til studien, ta kontakt med
Anette Drønen Sunde / tlf. 45473143 / anette.dronen@student.uib.no
Veileder: Frode Guribye, tlf. 55584184.

Studien er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS.

Samtykke til deltakelse i studien
Samtykket kan innhentes muntlig eller skriftlig.

Jeg vil være anonym:
- ❑ Ja
- ❑ Nei

Jeg har mottatt informasjon om studien, og er villig til å delta

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(Signert av prosjektdeltaker, dato)

Appendix E – NSD approval

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Frode Guribye
Institutt for informasjons- og medievitenskap Universitetet i Bergen
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5007 BERGEN

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nsd@nsd.uib.no
www.nsd.uib.no
Org.nr: 985 321 884

Vår dato: 08.12.2015 Vår ref: 45453 / 3 / LB Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 02.11.2015. Meldingen gjelder prosjektet:

45453	*Hvordan kan man, gjennom design av et interaktivt system, støtte desken/journalister/journalist studenter i å (få kunnskapen) til gjøre nødvendige etiske og journalistiske vurderinger når de velger ut visuelt brukergenerert innhold/bilder fra publikum?*
Behandlingsansvarlig	*Universitetet i Bergen, ved institusjonens øverste leder*
Daglig ansvarlig	*Frode Guribye*
Student	*Anette Drønen Sunde*

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 06.06.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal Lene Christine M. Brandt

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices
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TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø, Tel: +47 77 64 43 36, nsd@svf.uit.no

Appendix F– Ideation Workshop

The ideas generated in the ideation session

One idea was a "best practice" approach that includes training of finding content, chatting with users, what tools to use, which methods that are available and how to talk to users to achieve what you want. A similar suggestion was to have a UGC web portal for students, newsrooms where users can enter practices and guidelines. Further, it was suggested that UGC goes through a checklist where checked images are marked, maybe even watermarked, and that the checks can vary based on the different categories of UGC. A graded verification (e.g. traffic light) were proposed, and it was also suggested to have artificial intelligence to check the images. Other suggestions were to provide sample material of ethical issues, possible as a simulation, to have a base that contains relevant arguments for and against different types of image usage, or a tool that could find stories with the potential to go viral, searching through social media. Some of the ideas emphasizes collaboration with coworker where one of the ideas one idea was to evaluate the use of photos/videos by commenting, another was to have a quick assessment where colleagues can respond by a button or sending a notice to get a quick answer on whether or not to use a photo.

During the workshop session, also possible UX goals were discussed, suggesting that the system should be seamless, invite to reflection and thoughtfulness, as well as encourage brave use of visual user-generated content. To try to exploit the potential in visual UGC while avoiding the pitfalls and supporting the ethical guidelines.

Figure 1: Pictures from the ideation workshop

Appendix G – Second Persona

TROND ÅRLAND

AGE: 33
LOCATION: Bergen
OCCUPATION: News Editor
WORK: Bergens Tidende

BACKGROUND
Previously worked both as a journalist and reporter in TV 2 in Oslo, as well as experience from the TV-production. Took the job in Bergen to get closer to his family. He is now working as news editor and chief for the online newspaper.

GOAL
To develop and strengthen the newspaper digitally, and make use of new media to communicate with, and reach out to, the readers. He wants a closer working relationship with the readers to enhance the product. Needing to improve the routines for the visual user-generated content and the quality assurance of this.

FRUSTRATIONS
New employees requires a lot of training in the beginning. As the news desk often is busy, the training can be inadequate at times. Users send in fewer images than before, and much is published directly in their social media like Facebook or Instagram. Making it difficult to find and verify newsworthy content

SCENARIO
The summer interns have just started working in the newspaper. As the visual user-generated content is evolving constantly, it is important that the information is up to date. Trond get gets input from the group of front editors and updates VIBI. He shows the interns VIBI at the presentation meeting, asking them to go through it and challenges them to find a case in the social media. This, to establish best practice from the very beginning.

Appendix H – User Test Consent Form

Forespørsel om deltakelse i forskningsprosjektet

"VIBI – visuelt brukergenerert innhold"

Bakgrunn og formål
Dette er en brukerundersøkelse av VIBI – en interaktiv nettapplikasjon for visuelt brukergenerert innhold. Applikasjonen er en opplæring/ressurs til bruk av nyhetsmedia. Formålet i dag er å undersøke bruken og brukervennligheten av produktet. Dette er en del av en masteroppgave i informasjonsvitenskap ved UiB, som er under forskningsprosjektet ViSmedia.

Du forrespørres om å delta fordi du har relevant bakgrunn og/eller er i målgruppen til produktet. Deltakere blir ikke evaluert, kun applikasjonen.

Hva innebærer deltakelse i studien?
Deltakelsen er todelt;

1. Først vil du få litt informasjon om applikasjonen og tid til å gjøre deg litt kjent med den. Deretter får du to oppgaver du skal gjøre ved bruk av systemet. Testansvarlig observerer og er tilgjengelig for spørsmål underveis.

2. Dette følges opp med noen spørsmål om systemet du har brukt.

Det er satt av en time til brukerundersøkelsen.

Hva skjer med informasjonen om deg?
Deltakere vil ikke kunne bli gjennkjent i publikasjonen.

Prosjektet skal etter planen avsluttes innen 1. juni 2018.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn.

Dersom har spørsmål til studien, ta kontakt med Anette Drønen Sunde, tlf. 45473143
Eller veileder; Frode Guribye, frode.guribye@uib.no

Det er greit at ikke-identifiserende bilder blir tatt:

- ☐ Ja
- ☐ Nei

Samtykke til deltakelse i studien

Jeg har mottatt informasjon om studien, og er villig til å delta

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(Signert av prosjektdeltaker, dato)

Appendix I – User Tasks

Brukertest

Se for deg at du jobber som journalist på nettdesken i en middelsstor avis.

Case 1

Du har fått inn et tips om at det blir solgt dop som ligner på godteri til elever på ungdomsskoler i bergensområdet. Tipset kom inn anonymt på epost, og vedlagt ligger det et bilde.

Kan du sjekke/verifisere bildet?

[Bildet er fjernet: Bilde av dop i form av rosa bamser lånt fra Google]

Case 2

Redaksjonen har fått inn et bilde der avisen er tagget på Instagram. Du vurderer å bruke bildet som «krydder» til en sak som handler om sommeren.

Hva ville du gjort med dette bildet før du eventuelt bestemte deg for å bruke det?

[Bildet er fjernet: Bilde av et barn tagget med diverse mediers hashtag, som det fremkommer fra en av taggene at det er bestemoren som har «sendt» inn. Bilde lånt fra Instagram.]

Appendix J – SUS

Noen spørsmål om systemet du har brukt.

Vennligst sett kryss i kun en rute pr. spørsmål.

	Sterkt uenig				Sterkt enig
1. Jeg kunne tenke meg å bruke dette systemet ofte.	1	2	3	4	5
2. Jeg synes systemet var unødvendig kompliserт.	1	2	3	4	5
3. Jeg synes systemet var lett å bruke.	1	2	3	4	5
4. Jeg tror jeg vil måtte trenge hjelp fra en person med teknisk kunnskap for å kunne bruke dette systemet.	1	2	3	4	5
5. Jeg syntes at de forskjellige delene av systemet hang godt sammen.	1	2	3	4	5
6. Jeg syntes det var for mye inkonsistens i systemet. (Det virket "ulogisk")	1	2	3	4	5
7. Jeg vil anta at folk flest kan lære seg dette systemet veldig raskt.	1	2	3	4	5
8. Jeg synes systemet var veldig vanskelig å bruke	1	2	3	4	5
9. Jeg følte meg sikker da jeg brukte systemet.	1	2	3	4	5
10. Jeg trenger å lære meg mye før jeg kan komme i gang med å bruke dette systemet på egen hånd.	1	2	3	4	5

I

SUS
Norsk versjon ved Dag Svanæs
NTNU 2006

Appendix K – User Test Guide

Brukertesting

Fase 1 – Rammesetting (10 min)

1. Snakke om masteroppgaven
    a. Hva er VIBI?

VIBI er et system for brukergenerert innhold. Altså, video og bilder som media får tilsendt og/eller finner i sosiale medier. VIBI består av tre deler; verifisering, retningslinjer og ressurser.

2. Forklare hva som skal skje
    a. Gjøre seg kjent med systemet
    b. Gjøre to oppgaver
    c. SUS
    d. Spørsmål/intervju
3. Er noe uklart/har respondenten noen spørsmål?
4. Samtykke?

Fase 2 – Brukertesting (10 min)

1. Gjøre deg kjent med systemet
2. Utføre to oppgaver
    a. Testansvarlig observerer og er tilgjengelig for spørsmål underveis

Fase 3 – SUS + Intervju (20 min)

1. System Usability Scale (SUS)
2. Spørsmål jeg evt. kan stille (kommer an på svarene i SUS)
    a. Hvorfor vil du bruke/ikke bruke det ofte?
    b. Hva gjør systemet komplisert/ikke komplisert?
    c. Hva var lett/vanskelig med systemet?
3. Intervju:
    a. Tror du at personer som bruker systemet blir mer skeptisk til å bruke brukeregenerert innhold?
    b. Tror du systemet vil gi mer trygghet til å bruke brukergenerert innhold?
    c. Føler du systemet oppfordrer til refleksjon rundt brukergenerert innhold?
    d. Føler du at deskmedarbeidere/journalister kan lære noe av å bruke et slikt system?
    e. Hva tenker du om muligheten for redaksjoner å legge til innhold selv? Retningslinjer og ressurser.
    f. Er det noe du føler mangler med systemet?
    g. Noe du selv vil tilføye/kommentarer?