Audience as clicks: Web analytic tools in Finnish online newsrooms

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Tiivistelmä – Referat – Abstract

Previous research has shown that media organizations are increasingly relying on audience-measuring metrics derived from web analytic tools for news judgment. This reliance is said to be reshaping online journalism, raising the questions of audience power, tabloidization of content and the role of journalistic values. However, research on web analytic tools in news media is scarce and does not describe how and to what effect the tools are used in various types of news media. Therefore, this study was set up to discover how web analytic tools are used in Finnish online newsrooms and how their use affects relationship with the audience and journalistic content.

To answer the research questions, nine semi-structured interviews were conducted with web editors and online journalists from Finland's major news media. To observe possible differences in the use of web analytic tools, the sample included different types of media organizations: public service broadcaster *YLE*, broadsheet and business news dailies *Helsingin Sanomat*, *Kauppalehti*, *Talouselämä*, *Taloussanomat*, general news media *UusiSuomi*, *Aamulehti*, *HBL*, and a more entertainment-oriented *Iltalehti*. Once gathered and transcribed, the interviews were coded and analyzed with grounded theory qualitative data analysis.

The findings showed that web analytic tools are extensively used in Finnish online media and their use does affect journalistic work but as one factor among others. Data derived from web analytics was perceived to bring journalists closer to their readers, intensifying the dilemma of balancing news agenda between audience preferences and journalistic values. Online journalists and web editors were found to rely on web analytics for immediate handling of stories in real-time and for long-term strategic decision-making.

Avainsanat – Nyckelord – Keywords
Web analytic tools, website traffic data, audience-measuring metrics, audience, online journalism, audience relationship, journalistic content, qualitative data analysis, grounded theory, Finland.

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1. Introduction

Media content has been moving online for over a decade. Most of the traditional print media today have an online edition. Some have even adopted other platforms and offer mobile, tablet or e-reader editions. The number of online-only media is constantly on the rise. As content is moving online, circulation numbers are replaced by website traffic numbers because measuring the reach and readership of publications remains crucial for media companies.

There are a growing number of tools and services that help measure online performance and audience reach in various ways. These tools are generally referred to as web analytics or metrics. According to the Digital Analytics Association (2008), web analytics are "the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage." Page views, traffic sources, referral sites, most popular content by various categories – these are some of the most common components of any website that web analytics can measure.

There are various programs that offer such analytic tools: some provided by established media tracking firms like Nielsen NetRatings, comScore, Omniture, Google Analytics, Hitwise, Quantcast (Graves & Kelly, 2010, p.8), some are offered by a number of emerging services. Probably the most well-known and most popular web analytics service out of the latter category is Google Analytics (http://www.google.com/analytics/). It is free to use and easy to install for any website. Other popular web analytics include Yahoo! Web Analytics (http://web.analytics.yahoo.com/), KISSmetrics (https://www.kissmetrics.com/), ClickTale (http://www.clicktale.com/), Clicky (http://clicky.com/) and Piwik (http://piwik.org/).

This diversity of tools has a serious drawback: there is no existing industry standard for measuring online traffic (Graves and Kelly, 2010). Different tools measure

different attributes of online behavior, which often leads to contradictory and incompatible results. Undoubtedly, this creates a confusing environment. However, as this study shows, in Finnish context media organizations have implicitly adopted a benchmark that all companies adhere to – TNS Gallup metrics.

Confusion aside, web analytics "is a booming business" (Weischedel & Huizingh, 2006, p.463) with a growing number of providers who offer tools with various customizable options that present information in real-time and ensure the data's security. Some of the things that web analytic tools measure include information on where the user found the link to the website from, how long they stayed on the page, what other pages they looked at or whether they came back and shared the content with their friends. Online publishers, amateurs and professionals alike, are some of the prominent users of web analytics tools. If interpreted and analyzed, the data derived from the tools can help improve the website's online presence, provide valuable statistics for advertisers and give a substantial overview of the success or failure of any particular story or other component of the publication. However, managing that data is often hard due to its sheer size and richness. Using the tools and interpreting the data might also require specialist skills that not every journalist or editor is trained for.

1.1 Aim and Justification

The aim of this study is to understand how web analytic tools are used in online newsrooms and how they influence journalistic content and journalists' relationship with the audience. My particular interest lies within daily web publications of various types: business dailies and current affairs broadsheets, public service broadcaster and tabloids. Since content-creation and relationship with the audience is motivated by different, sometimes contrasting, forces in these media outlets, I want to explore how web analytic tools are used and influence these processes.

Web analytic tools are a new field in online media work and communication research yet they have a potential to profoundly impact journalists' relationship with their audiences and the kind of content that gets published. Therefore, it is important to explore how these tools affect journalistic work to envision the trends of where online media is heading.

A number of recent studies explored various aspects of web analytic tools and their influence on online journalism. One of the earliest studies of how tracking audience online influenced journalists' relationship with their readers found a shift in attitudes (MacGregor, 2007). While previously journalists thought they knew best what the audience should read, once they could see the numbers of how readers were consuming their content, they started becoming more perceptive to their audience's interests. A study of British media discovered their strategic decision-making was heavily influenced by clicks, leading to "a softer and more populist news agenda" (Currah, 2009). An in-depth study of one newspaper's transition from print to online-only in Finland established that audience metrics impacted journalistic work and pushed it more towards popularism (Thurman & Myllylahti, 2009). A study of web analytics' use in US newsrooms revealed that journalists are increasingly relying on analytics data to supplement news judgment (Anderson, 2011). A Swedish study of journalists' perception of influence and power different groups have on media discovered that journalists perceived audience as one of the most influential groups, above media owners, advertisers and politicians (Strömbäck & Karlsson, 2011). Another study of Swedish online newsrooms concluded that traffic numbers do affect overall news judgment and handling of individual stories but it was considered as one parameter among many others (Karlsson et al., 2011). Finally, the most recent study of the extent to which user preferences affected editorial decisions and vice versa revealed that editors pay a lot of attention to audience preferences while editorial news placement had little to no effect on reader's choices (Lee et al., 2012).

The outlined body of research offers a solid foundation for conducting a research on web analytic tools' use in online newsrooms. Though this study shares some similarities with the previous research, it has important distinctions. While previous works mostly concentrated on journalists' attitudes and perceptions of their audiences (MacGregor, 2007; Currah, 2009; Karlsson et al., 2011) or on mathematical calculation of causal effect between clicks and journalistic content (Anderson, 2011; Strömbäck & Karlsson, 2011; Lee et al., 2012), this study looks at how web analytic tools are used in practice in daily working routines of online journalists and how that affects published content and journalists' relationship with the audience. Even though one of the cited studies was conducted in Finland (Thurman & Myllahti, 2009), this research is distinctly different from it in its scope and perspective. Unlike Thurman and Myllylahti's research (2009), this study does not concentrate on one newsroom, nor does it seek to explore the difference between print and digital media. Karlsson et al.'s research (2011) comes closest to this study as it also included qualitative interviews with journalists working in online newsrooms of major Swedish media. However, in contrast to their work this study takes a holistic view on web analytic tools, which includes more aspects of online behavior than individual clicks. In addition, instead of concentrating on the click's impact on journalistic values, this work explores how web analytic tools are used in practice and how their effects are negotiated on a daily basis in newsrooms.

1.2 Key Concepts

The two key concepts of this study are web analytic tools and online journalism. Web analytics is a concept coming from Computer Science. It is officially defined by the Digital Analytics Association (2008) as 'the measurement, collection, analysis and reporting of Internet data for the purposes of understanding an optimizing Web usage'. Thus, web analytic tools can be generally defined as computer software that websites and blogs use to measure their online performance. Online performance is measured by indicators such as the number of people visiting the site and their

geographical location, their entry and exit points, the number of people sharing and commenting on the content, the sources of traffic as well as the demographic breakdown of the website's audience. All of these in essence measure the website's users' behavior.

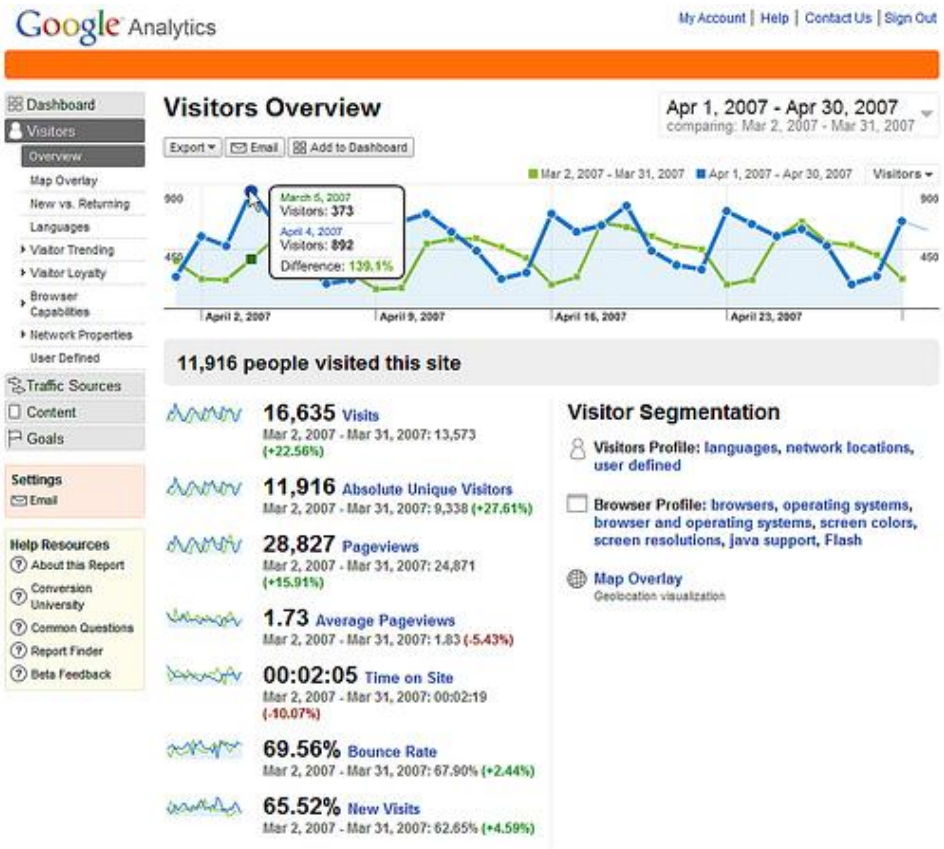
There are a number of indicators or metrics used by web analytic tools to measure online performance. Table 1 shows the basic concepts and their definitions according to the Tech Terms Computer Dictionary (http://www.techterms.com/).

Table 1. Definitions of key metrics used in web analytic tools.

Measurement	Description
Page Hits	A request for each item on a website (There can be many items in a single webpage, hence it is not a good measurement of a website's traffic).
Page Views	The number of times a given website has been visited.
Unique Pageviews	The actual number of people who visited a given website.
Session	The duration of time a user spent on a website per visit.
Hit	1) A request made to a web server. 2) The number of results a search engine provides for a given word.
Pages Viewed per Visitor	The number of pages a website's visitor goes through during each session.
Impressions	The number of times a page within a website was shown to the user.
Clicks	The number of times a user viewed the website's hyperlinks and images.
Unique Clicks	The number of non-repeated times a user viewed the websites hyperlinks and images (excludes double and triple clicks by the same visitor)
Click Trails	The history of web pages visited by each website's visitor.
Conversions	The ratio of actions that resulted from visits or clicks.

Picture 1 below shows an example of a web analytics tool's homepage by Google Analytics. While graphical interface might differ from one type of tool to another, the general layout is similar across the different tools.

Picture 1. Sample of an overview page of Google Analytics.



What constitutes online journalism has been a matter of debate for some time. One of the main reasons for disagreements is the fact that online journalism is a fairly new phenomenon that is constantly changing and evolving. As Kopper et al. (2000) noted, setting up and conducting a scientific study is so time-consuming that by the time it is completed the object of study might no longer exist or could have changed dramatically since the initial data collection. For that reason, these authors adopted a very broad definition of online journalism as journalistic activities on and through the Internet. Though agreeing in general terms to this definition, Deuze (1999) wanted to emphasize in his definition that journalists are first and foremost professionals. Thus, his definition specified that to be called an online journalist the person's main income should derive from journalistic work that is conducted on behalf of a formal media organization and included one or several of what he considered to be core journalistic activities: news gathering or research, selecting the news, writing or processing and editing the content (Deuze, 1999, p.376). This is the definition of online journalism

that this study adopted. While it is fairly loose, in my opinion it still captures the most important details of the kind of activities online journalists are responsible for.

1.3 Research Questions and Study Outline

The study's main research question is 'How and to what effect are web analytics tools used in Finnish online newsrooms?' To specify and explore this question, the study includes two sub-questions. The first one is 'What is the perceived impact of web analytics' use on the relationship with the audience?' The second sub-question looks at how web analytic tools affect the choice of stories and their presentation and promotion on the media's website by inquiring 'How does the use of web analytic tools impact published content?"

To answer these questions, nine semi-structured qualitative interviews were conducted with web editors, web producers and online journalists from Finland's major national media. Once collected and transcribed, the interviews were coded according to grounded theory's qualitative data analysis. When all texts were coded, the codes were put into categories and the resulting findings are presented in this paper.

My personal reasons for undertaking this research came from a keen interest in internal workings of media companies operating in the online space as well as a desire to better understand how web analytic tools affected online journalism. Having worked as a blogger in an online news media, I experienced first-hand the challenges associated with using and interpreting such metrics. In addition, I believe web analytic tools have a profound effect on journalistic work and wanted to discover just how big of an effect it was in reality.

The following chapters explore in more detail first the literature that this study draws on, looking specifically at the changes Internet has brought into journalism and how technology is impacting online journalism, audience relationship and content. The

next section outlines this study's methodology, elaborating on sample selection, data collection and data analysis. Following is the presentation of findings from the analysis that include a description of what tools and how are used in online newsrooms, how they help measure popularity, bringing the audience closer to journalists and affecting the published content. The next chapter discusses the findings, comparing them with previous research and suggesting implications of the results for media and journalism. Finally, the concluding chapter briefly summarizes the study and its main findings.

2. Previous Research on Online Journalism and Technology

The subject of this study is positioned at the intersection of research on online journalism, on the effect of technology on journalism and on the impact of a specific tool, namely web analytics, on editorial content and the relationship between journalists and their readers. In this chapter, I define the study's theoretical framework by first looking at online journalism in a broader view to understand the changes it has been going through. Following is the review of existing literature on how technology in general has been influencing journalistic work over the years. The chapter concludes by scrutinizing previous research on how web analytics have impacted relationship between journalists and their readers as well as their impact on journalistic content.

2.1 How Internet Has Changed Journalism

The first news media on the World Wide Web started in 1992 (notably in the US) and fully emerged by 1994 (Deuze, 2001a, p.4). Since then Internet has made an immense impact on the journalistic profession. Internet not only changed the way journalists work but also altered the role they assume in their reporting. The fact that people check news sites multiple times a day means publishers need to provide new content all the time. Hence, online journalists have to work under constant pressure of publishing stories. As the speed of publishing increases, the length of stories decreases. Reader's attention span online is much shorter than when reading a printed text, hence stories tend to be broken down and published in shorter chunks throughout the day.

This is where hypertextuality, interactivity and multimediality emerge as novel features of journalism online (Deuze, 2001b). Hypertextuality refers to the practice of interconnecting online content through hyperlinks included in online stories (Deuze, 2001b). This means that the reader can navigate to and from a story at any time, which changes the whole structure of content. Stories become non-linear, meaning

there is no beginning or end to it but it is rather an addition to existing similar pieces. Interactivity refers to the possibility of including the audience into the news publishing experience through direct or indirect communication online (Bardoel & Deuze, 2001b). Thus, readers are often invited to comment on stories online or contact journalists through email or online forums. Multimediality is related to the possibility of including multiple formats of content (text, images, audio and video) into one news story (Bardoel & Deuze, 2001). As a result of these trends, journalists are expected to perform more tasks then before. Apart from sourcing, writing and editing the story they might need the expertise to shoot a video on the scene and use related software to edit the video. Learning how to put content from different formats together or when and how to put hyperlinks are also some of the additional skills online journalists need to know. Not to mention the skill of media literacy that helps deciphering relevant information from dubious content online.

Four additional trends in online journalism have been of interest to media researchers in the last decade: media convergence, the fleeting nature of content production, changes in the process of news gathering and transformations in the editorial workflow (Mitchelstein & Boczkowski, 2009, p.568). My research is most closely related to the work that studied changes in the editorial workflow. In regards to that topic most of the current research has concentrated on the multitasking nature of online journalism. Deuze (2004), Boczkowski (2004a) and Singer (2004) have all reported the growing demand for journalists to perform more tasks in less time and have the expertise to work across platforms. Those and other changes outlined above have shaped modern reporting.

Apart from the internal stresses and strains online journalists are subjected to due to the nature of their work, there are external pressures on the profession that need to be discussed. Journalists themselves are the harshest critics of online journalism. As Deuze (2002) outlined, online journalism is often regarded as unprofessional, lacking traditional ethics, credibility and formal standards. It can be argued that one of the

biggest reasons traditional journalists are so sceptical of online journalism is that they feel threatened by this new development in their field of work. Online journalism not only requires a whole new set of skills but it also changes the role of journalists. From serving a traditional civic role of enlightenment and education, journalism has turned into a pick-and-mix collection of items and ideas that journalists have little control over. Their work becomes dependent on audience preferences and subjected to demands of opennes, inclusion and interactivity. The distinction between opinions and news, commercial and editorial items, amateur and professional writing become blurred. It is no longer clearcut what constitutes being a journalist and what their exact role in today's society is.

More than a decade ago, Deuze (2001a) wrote that Internet is an "experimental testing ground" where journalists can learn "new skills, standards and role definitions". That claim still holds true today. Throughout the last decade we have seen the development of online journalism into something distinctively new and in my opinion the process is not yet complete. The whole media system is undergoing fundamental change. Online journalism is still not making enough profit to sustain the industry so editors and media professionals alike are looking for ways to solve this problem. Nonetheless, whatever form or function journalism would fulfill in the future, there will always be forces affecting editorial work. Journalism that is completely autonomous and independent of any external or internal forces is an ideal theoretical concept unattainable in reality. "News does not have an independent existence" writes Gieber (1999, p.218). In other words, reporters will always be subject to various forces and choices: from the topic to cover, to the sources, angles and to the medium through which to convey the story.

2.2. How Technology Influences Online Journalism

Computerization and Internet have profoundly changed the way journalists work. However, media researchers (McManus, 1994; Deuze, 2001a) claim that the new

technologies go beyond changing the way journalists work but actually impact their worldview, professional standards, values and relationship with the audience.

Scholars have contrasting views on how technology affects journalistic practices. On the one hand, technology has always played a role in shaping journalism and technological innovations have been considered the driving force behind the changes in journalistic practices (Pavlik, 2000). On the other hand, technology should not be seen as an outside force affecting journalism but rather it should be viewed in the context of its application in practice and how that affected previous norms (Deuze, 2007). A less deterministic approach suggests that journalistic practices and the way technology is used in a newsroom are interconnected (Boczkowski, 2004b). This approach came as a conclusion from a study of three online newspapers which discovered that newsroom dynamics are affected by technological adaptation and the produced news are a result of that context (Boczkowski, 2004b). A similar conclusion was reached in a different study on the way technology was used in six online newspapers (Dibean & Garrison, 2001).

Overall, previous studies suggest that journalistic practices have actually changed very little since the introduction of new technological innovations (Mitchelstein & Boczkowski, 2009). Even though journalists have the autonomy and capacity to utilize new technologies, they were found to believe that adopting them would complicate rather than help their work (Schmitz Weiss & Domingo, 2010) Thus, it is not surprising that the process of adapting new technologies in newsrooms is lengthy, often does not go as expected and in some cases never takes place at all.

My research shares and relies on Boczkowski's and Deuze's view of the relationship between technology and journalism. On the one hand, we cannot deny the effects technological innovation has had on reporting practices. On the other hand, I uphold the view that such innovation is not the driving force of the changes in newsroom dynamics but needs to be seen within the larger context of social and political change.

Internet access, convergence between the different devices and citizen-journalism have all been made possible with the help of technological development. However, without increasing wealth and technological literacy, without growing numbers of activists or people willing to share things from their lives with the rest of the world, that change would not have happened either. Thus, technology has an effect on the way stories are made and presented, but it is not the sole or the main factor that affects journalistic practices.

That said, certain technologies have had an indisputable impact on the way journalists work. Internet made it possible for any reporter to access a vast wealth of data, easily communicate with sources of information, instantly publish their work, have it accessible from anywhere in the world and get feedback from readers. Various computer software made it possible for someone without formal training record and edit audio-visual content, easily spellcheck written content and combine different formats easily on the same page. Web analytic tools represent one type of such technology that can have a profound impact on journalistic work. Monitoring of webpages has greatly intensified in the last few years (Lee et al., 2012; Anderson 2011, MacGregor 2007, Boczkowski 2004a), which gives a valid reason for looking at how this increased interest in online behavior impacts online journalism.

2.3 How Web Analytic Tools Impact Audience Relationship

Research on web analytic tools has been originally of interest in the field of business studies (Welling & While, 2006). In that context, the tools were mostly studied as instruments that help companies optimize their websites, i.e. to make their websites easier to use and navigate for the visitors so that the incoming traffic would be more likely to stay and engage with the website's content (Weischedel, Birgit & Huizingh, 2006). Researchers in media field became interested in studying web analytics and their effects on media production since journalism has become more market-oriented (McManus, 1994). Below is a discussion of previous studies that describe how web

analytic use in newsrooms has been affecting journalists' relationships with their audience.

Traditionally, research on journalists' relationship with the audience talked about mission, duty and service (Tsfati, Meyers & Peri, 2006). While those ideals continue to play a role in the relationship, other things have come into play too. Probably the biggest change brought by the Internet into that relationship was empowering audiences. While previously their means of engaging with the media were limited, audiences today have a plethora of possibilities at their disposal: from direct comments on individual news stories, to online forum discussions, microblogs like Twitter, not to mention numerous channels for creating and publishing their own content. As a result, today's audience actively takes part in the process of news creation and communication (Domingo, 2008; Strömbäck & Karlsson, 2011; Karlsson & Clerwall, 2011; Lee et al., 2012). Dealing and engaging with these interactions has become part of journalistic work. Consequently, monitoring and measuring all the different aspects of readers' behavior online with the help of web analytic tools has also become part of journalistic work.

Previous studies point out that the ability to measure audience behavior online has impacted journalistic work (Thurman & Myllylahti, 2009; Currah, 2009; Strömbäck & Karlsson, 2011; Anderson, 2011; Lee et al., 2012). One of the studies conducted in Finland on the financial daily newspaper *Taloussanomat* (Thurman & Myllylahti, 2009, p.699) found that "story metrics are impacting on journalistic work". The research looked at the transition of the newspaper into an online-only edition through in-depth interviews with the media's staff, one week observation of the newsroom and study of internal documents. One of the study's key findings points out that by providing data on readers' online behavior web analytics help journalists better understand their preferences but this information can negatively affect the choice of stories since the majority of traffic tends to come from entertainment news.

Historically, journalists' ideas of audience preferences have been described as close to dismissive and almost patronizing. MacGregor (2007, p. 281) cites famous studies by Schlesinger (1987) and Gans (1980) who showed that the widespread belief among journalists at the time was that audiences do not know what they want. Since then, the attitudes have been changing. In his study at the beginning of this century, Deuze (2001b) discovered a growing desire among media workers to have an active and even an interactive relationship with their audiences. Though, as other researchers discovered, few journalists actually implemented those attitudes into their work at the time (Quinn & Trench in McGregor, 2007).

Audience was traditionally conceived by editors as the least influential group (Strömbäck & Karlsson, 2011), but audience-measuring technology like web analytics has changed how editors view their readers (Lee et al., 2012). Recent study of local newsrooms in the United States confirms the shift in attitudes by discovering that interviewed journalists no longer viewed their audience as passive but rather as active "partners" who "needed to be simultaneously empowered, catered to and captured for analytical measurement purposes" (Anderson, 2011, p. 564).

Thus, an increased interest in audience preferences has intensified the dilemma of catering for audience needs versus producing content deemed as important based on journalistic values. This, in turn, brings up the question of journalistic autonomy. One of the biggest concerns is that a more active audience might lead to professional journalists becoming "less autonomous" and "reliant on audience metrics as a supplement to news judgment" (Anderson, 2011, pp. 552-555). However, most of the recent studies concluded that editorial news judgment still prevails over traffic numbers (MacGregor, 2007; Thurman & Myllylahti, 2009; Karlsson & Clermall, 2011). That being said, the importance of web metrics cannot be denied and neither can the tension they bring to editorial decision-making between seeking to attract larger audiences and maintaining quality journalism. This negotiation of values is not a new phenomenon: offline journalists have been found to struggle with similar

questions, suggesting that “journalistic ideals and practices […] are continuously under construction” (Hujanen, 2008, p. 196). Though, as previous research cited above demonstrates, audience measuring tools impose a bigger demand on media professionals.

2.4 Web Analytics’ Impact on Media Content

Adjusting content to audience’s preferences might have negative consequences on the quality of content. Just like in television, where chasing for high audience rankings is linked to ‘dumbing down’ of content (Kishan Thussu, 2007), trying to appeal to the largest possible audience can cause mediocrity in content coverage. Indeed, greater emphasis on user preferences could lead to tabloidization because lighter, more entertainment-oriented stories tend to receive more clicks than heavier, more serious ones (Thurman & Myllylahti, 2009; Karlsson & Clerwall, 2011).

Tabloidization is defined by Esser (1999, p. 291) as the outcome of commercialized, market-driven media that is driven by pressures from advertisers to reach large audiences. The author points out that the term is problematic and that debates around its exact meaning are still common in academia. However, the main attributes of tabloidization that Esser (1999, p. 293) describes are increased emphasis on entertainment and decrease of informative news coverage, prevalence of shorter news stories over long-form ones and a less formalized address to the readers in the tone of narration. The first attribute is most commonly understood in discussions about tabloidization. While the second attribute is technically true in the online environment, it is mostly caused by the nature of the medium rather than tabloidization per se. Readers are less inclined to read long articles on computer screens let alone on their mobile device screens than they are on printed paper. As for the last attribute regarding the tone of address, it needs to be viewed in the context of a specific media.

Even though tabloidization of media has been taking place before the emergence of online journalism or the implementation of web analytic tools, this study supports the view that audience-measuring tools have intensified editorial struggle for publishing quality content. This perspective is supported by previous research which indicates that measuring traffic has an impact on media's strategic decision-making, leading to "an increasingly crowd-powered news agenda" (Currah, 2009) and increasing the amount of populist news due to their popularity (Thurman & Myllylahti, 2009). Measurable data on what and how people are reading online has made it possible to "cross-reference readership and advertising sales data" in great detail (Currah, 2009, p. 86-89). As a result, the importance of greater traffic numbers has increased, pushing web editors to heavily rely on "raw, quantitative data" (Anderson, 2011, p. 563).

Thus, it can be concluded that increased use of web analytic tools potentially results in more populist and tabloidized news content but the extent and their exact role in the process are unclear.

3. Methodology

This study is concerned with discovering how web analytic tools are used in Finnish online newsrooms and how their use affects editorial content (i.e. the choice of stories, their display on the website etc.) as well as relationship with the audience. Due to practical considerations the topic was researched exclusively in Finland, therefore the findings of this thesis might not apply to other countries as use and attitudes towards analytic tools may vary. However, since media industry in general has been going through major changes due to the Internet and rise of mobile and tablet devices, many of the themes raised by the media employees interviewed in this study can probably be found in newsrooms around the globe.

The question this study aims to answer is: "How and to what effect (on content and relationship with the audience) are web analytic tools used in online newsrooms?" The purpose of the study is to attain detailed descriptions of practices and attitudes web editors and online journalists have regarding web analytic tools. Qualitative research method was used to answer the research questions because the study needed to provide thick, detailed accounts of the phenomenon at hand. Nine semi-structured qualitative interviews were conducted with web editors and online journalists of major Finnish media between January and May 2012. The data was transcribed, coded and analyzed using grounded theory qualitative data analysis. Below is a detailed description of the research design, data collection, sampling and data analysis as well as a discussion of the study's reliability and ethical concerns.

3.1 Research Design

Qualitative research method was used for data collection and analysis in this study because the research strives to answer a "How"-question and thus to provide a detailed description of practices, perceived effects and attitudes of using web analytic tools in newsrooms. Collecting detailed descriptions was necessary to derive an understanding of how new technologies are used in the real life and how they are affecting journalism in general. As Blanche et al. (2006, p.48) wrote: "…qualitative

research is more commonly used to inductively explore phenomena and to provide 'thick' (i.e. detailed) descriptions of phenomena".

Another reason qualitative research was chosen was the fact that this study is explorative in nature. Exploration in research is needed when there is lack of scientific knowledge about the studied phenomenon but there is reason to believe that the phenomenon is worth studying (Vogt, 1999; Stebbins, 2001). Since research on web analytic tools is scarce, there is a need for further exploration concerning their use in practice and how that affects daily decision-making in the newsroom. These are the kinds of issues quantitative research cannot help uncover.

3.2 Data Collection Method

To obtain the desired information nine semi-structured interviews were conducted with selected journalists and editors from major Finnish media houses. The purpose of the interviews was to find out common practices, attitudes, as well as differences web editors and online journalists have towards web analytic tools. The reason interviews were chosen as the main data-collection method was the fact that this method can provide enlightening and detailed data (Robson, 2002, p.273).

The reason semi-structured interviews in particular were used was because they give the interviewee more freedom to express themselves (Robson, 2002, p.270), which was essential to derive detailed and rich descriptions that this research revolves around. Robson (2002, p.270) describes semi-structured interviews as having predetermined questions whose exact order and wording can be modified. This flexibility is important in explorative research because it gives the researcher freedom to adjust questions to the context of specific interviews, skip irrelevant ones and probe interesting areas that arise from the interview. Semi-structured interviews can also be referred to as "respondent interviews" as classified by Powney and Watts (1987, pp.16-32) because they have some structure and the interviewer's agenda is

what matters most in such interviews. In other words, respondents were given a fair amount of space to express their opinions and describe their experiences yet the interview remained focused and did not go off the determined subject.

King (1994, pp.16-17) outlines five cases under which the use of semi-structured interviews is justified:

1) A study focuses on the meaning of particular phenomena to the participants.
2) The research studies individual perceptions of processes within a social unit using a series of interviews.
3) Individual historical accounts are required for a particular phenomena developed.
4) Exploratory work is required before a quantitative study can be carried out, for example to identify the range of different types of experiences which a subsequent quantitative study should address.
5) When quantitative analysis has been conducted and qualitative analysis is needed to support the findings and fill in more details.

The current study falls into the first, second and fourth categories. First of all, this study aims to find out how web editors and online journalists make sense of web analytic tools and the data they provide. Secondly, interviewee's attitudes towards the use of these tools were obtained, recorded and analyzed. Finally, the resulting findings can facilitate further comparative and quantitative studies that could examine whether conclusions derived from this study hold true in other countries and media environments.

3.3 Formulating Interview Questions

As established earlier, semi-structured interviews require a predetermined set of questions that can be further enriched by prompts and supplemented with additional questions. According to Robson (2002, p.272) when designing questions "distinctions are commonly made among seeking to find out what people know, what they do, and

what they think or feel". This leads, respectively, to questions concerned with facts, with behavior, and with beliefs or attitudes. Therefore, interview questions for this study inquired about factual information as well as respondent's attitudes. Below is a list of seven main questions plus a few prompting sub-questions posed to the interviewees.

1) Could you tell me what information do you measure with web analytics?
   Do you measure hits, pageviews, traffic sources, other trends?
   Do you look at those measurements for specific stories, different sections of the website, website as a whole?
2) Could you describe how in practice that is done?
   Do you personally check the analytics or do you have someone else do it for you?
   How often do you check the generated reports (daily, weekly, multiple times a day, monthly)?
3) Can you tell me what do you do with the acquired information?
   Do you discuss it in the newsroom? With whom?
   Have you ever faced any challenges? What kind?
4) Do you think web analytics are important for your own work?
   How does the obtained data affect the stories you write?
   Does it affect other aspects of publishing (for example, how long the story stays on the website, whether it is updated or where it is displayed on the page)?
   How important in general do you think are web analytic tools in your news organization?
5) Could you share with me how do you think web analytics affect journalism in general?
   What are the potential risks and benefits?
   For content and for journalistic practices?

6) Do you think this kind of technology changes the relationship between media and the audience? How?
   Does it transform journalism? In what ways?
7) Is there something missing that you would like to share that is related to this area?

3.4 Sample Selection

The research question itself points to the kind of respondents this research is concerned with: editors and online journalists. Since explorative research is built upon rich and 'thick' descriptions, the sample size does not need to be large and the selection procedure should not be random (Blanche et al., 2006, p.49). Therefore, this study included nine interviews: a number that was manageable practically yet was substantial for building a descriptive picture of the studied phenomenon.

Interviewees were chosen through a purposeful selection. The main criterion for selection was that the journalist or editor used web analytic tools during their work. Since experience with these tools was the main concern of the study, neither gender nor age were used as a selection criteria. Instead, the focus was on the position of the respondent in the professional ranks, the number of years they have worked in a media organization and the amount of time they have been using web analytic tools for.

Out of the chosen respondents, two were online journalists and seven were web producers, meaning they were responsible for the management and development of the published content but seldom wrote the content themselves. Six of the respondents had worked in media for 3-7 years and three had 11-15 years of experience. All of the respondents first started off as journalists in different publications and acquired editorial responsibilities in the course of their careers. The earliest starting date of using web analytics among the respondents was early 2000s,

the latest was May 2011. Most of the interviewees, however, started employing the tools between 2006 and 2009.

Due to confidentiality agreements with the participants, their names cannot be revealed and their comments cannot be identified with a specific media they were employed by at the time of interviews. However, I was allowed to reveal the list of media organizations who participated in the study: *YLE* (Finnish National Broadcasting Company), *Kauppalehti* (business news daily), *Helsingin Sanomat* (the biggest and most widely circulated national newspaper covering all general subject areas), *Iltalehti* (evening tabloid), *UusiSuomi* (online-only general news site), *Talouselämä* (business news daily), *HBL* (biggest daily general news publication in Swedish), *Aamulehti* (regional daily) and *Taloussanomat* (online-only business daily). Below is the list of the media with their traffic numbers.

Table 2. List of media houses included in the study and their traffic numbers.

Media Outlet	Pages views weekly*
Iltalehti	79 961 116^
Helsingin Sanomat	28 100 539
YLE	22 323 271^^
Kauppalehti	10 492 709**
Taloussanomat	5 104 310
Aamulehti	3 111 524
UusiSuomi	2 011 872
Talouselämä	834 160
HBL	552 510

* Numbers taken from http://tnsmetrix.tns-gallup.fi/public/ for Week 7/2013

** Numbers available only from Week 40/2012

^ Numbers available only from Week 25/2012

^^ Numbers available only from Week 23/2012

The size of online units in big media houses like *Helsingin Sanomat*, *YLE*, *Iltalehti*, *Kauppalehti*, *Talouselämä* and *Aamulehti* is surprisingly relatively small. The reason for it is that most of these publications maintain a printed edition and the majority of the employed journalists work primarily on stories for the printed paper. Some of that content is simultaneously adapted for the online version, so even though most of the

staff journalists are not officially part of the online newsroom they contribute quite a lot to the content of the webpages. Therefore, only a few journalists are needed as full-time online journalists to curate, edit and publish content. The only exception is *Taloussanomat* whose online newsroom is the biggest because it is an online-only publication. The smallest online newsroom from the list is *UusiSuomi*: even though it is an online-only publication their whole team comprised of five employees at the time of the interview.

Overall, the sample included mostly biggest national publications that cover a variety of subjects. The reason behind the diversity was to observe whether the use of and attitudes towards web analytic tools varied between different organizations. All of the included publications published content online on a daily basis. For practical reasons this study was limited to Finland, therefore the sample included only Finnish media companies.

The interviews were held in person at the working premises of the respondents and lasted between 30-45 min. The tone of interviews was relaxed and informal and the language of interviews was English. Since none of the interviewed respondents were native English speakers, they sometimes used Finnish expressions and words to refer to certain concepts. However, since my understanding of Finnish is fairly good, it did not hinder the research. Each interview was recorded and transcribed. In addition, I took some notes during the interviews to capture arising ideas, impressions or thoughts. These notes proved useful when categorizing and analyzing the data.

3.5 Analyzing data

Qualitative data analysis poses two main difficulties. The first is the sheer quantity of data that in-depth semi-structured interviews generate. Each interview transcript amounted to at least ten pages of text. Therefore, it was important from the first

interview to collect data systematically in clearly labeled folders and store the files on a safe server (and make back-ups just in case).

The second difficulty is that there is a more or less clear set of steps that researchers need to follow when conducting quantitative research but 'there is no clear and accepted single set of conventions for analysis corresponding to those observed in quantitative data' (Robson, 2002, p.456). This leaves a lot of room for flexibility to a qualitative researcher. At the same time, it makes it all the more important to explain in full detail what steps have been taken during each phase of the analysis.

The method for data analysis used in this study was grounded theory qualitative data analysis. Defined as a technique of identifying special characteristics of messages (Holsti, 1968, p.608), the method is also described as a flexible method for analyzing text data, which represents a family of analytic approaches ranging from impressionistic, intuitive, interpretive analyses to systematic, strict textual analyses (Rosengren, 1981, pp.9-19).

The reason this method was selected was that it offers the best tools for capturing themes that arose from the data. As Weber (1990) pointed out, rather than simply measuring the number of times concepts appear in the text, qualitative dataanalysis goes deeper into studying the meaning of the words and categorizing concepts into clusters for efficient analysis. The ultimate purpose of qualitative data analysis is to bestow knowledge and understanding of the object of study.

Collected data is "often not amenable to analysis until the information it conveys has been condensed and made systematically comparable" (Berg, 2001, p.238). Thus, in my study I applied grounded theory qualitative data analysis by systematically coding interview transcripts, grouping codes into clusters and discovering relationships and themes that evolved from the analysis. I have been meticulous when applying codes to the data which lead originally to 940 codes. After going through the codes again, the

number was reduced to 776. The first round of categorization resulted in 54 categories, some including only a few codes. Naturally, that number was too big and through further analysis I suppressed the categories down to six overarching ones. Below I address in more detail data management, note transcription and memo-writing.

3.6 Practicalities of Data Management

As established earlier, data collection produced a vast amount of material. To avoid losing important information or being overwhelmed with unmanageable body of transcripts, I used a number of useful techniques suggested by Wengraf (2001, pp.208-223). Firstly, it was important to clearly index each transcript and accompanying notes with time, date and name or pseudonym of the respondent. All the information concerning individual interviews was stored in a separate file to avoid confusion and make it easy to add clarifications or follow-up questions with the respondent.

Wengraf (2001, pp.208-223) emphasized the importance of "instant post-interview debriefing" to reflect on the interviews while they are fresh in one's memory and avoid losing any important thoughts or experiences. It is also important to start data analysis already during data collection: that way the researcher has a chance to modify collection method or technique if necessary and build the bases for data interpretation (Robson, 2002).

To follow the advice effectively, I took notes during interviews, added de-briefing comments straight after the interviews were conducted as well as maintained a memo diary throughout data analysis. Wengraf (2001) and Glasser (1978) particularly emphasize the importance of writing a memo while transcribing the data. In Glaser's (1978, p.83) words: "Memos are the theorizing write-up [of ideas about codes and their relationship] as they strike the analyst while coding". Once transcribed, the data

was coded and categorized using a web application for qualitative analysis called Saturate (http://www.saturateapp.com/). The application allowed highlighting passages of text and easily applying codes to them, as well as putting the codes into categories and condensing those categories later in the analysis.

3.7 Data Coding

When generating codes, Strauss & Corbin (1998) distinguish three phases of the process: open coding, axial coding and selective coding. In the first phase codes are assigned to units of data in order to find categories that arise from the material. In the second phase codes are interconnected with each other, combined and put into new categories. In the last phase core categories are established. Below is a more detailed account of each phase.

During open coding data was split into paragraphs or combinations of sentences that became units of data analysis. When assigning a code to each unit a question was asked: "What is this piece of data an example of" and labeled accordingly. Strauss (1987, p.33) distinguishes between in vivo codes and sociological constructs, the first refers to "literal terms used by individuals under investigation", whereas the latter "are formulated by the analyst". This study used in vivo codes because the whole purpose of this research is to describe the use and attitudes towards web analytic tools from the perspective of web editors and online journalists. The exact labels of codes were in some cases slightly altered throughout the analysis as more material was gathered. Each unit was assigned only one code. This phase of analysis is "essentially interpreting rather than summarizing… [and] teasing out the theoretical possibilities in the data' (Robson, 2002, pp.493-494).

As open coding is the first stage of data analysis it is crucial to analyze it carefully and exclude any possible biases. To ensure this, four steps described by Strauss (1987, p.30) were used to guide the process. First, when gathering the data I asked "a specific

and consistent set of questions". Second, data was analyzed minutely with attention to detail and careful observation. An illustration of this process is the fact that the initial open coding produced close to a thousand codes. Thirdly, coding was often interrupted to allow for reflection and memo-writing. Finally, I explicitly avoided assuming analytic importance of any traditional variables like age, gender, sex, social class, etc. since none of these attributes were considered when finding interviewees or analyzing the data.

Axial coding took the analysis further by linking together categories that were developed through open coding. During this phase, a more descriptive outline of the studied phenomena arises, including its context, interconnections and their consequences. Consequently, by establishing similarities between 54 initial categories, six overarching ones were produced. The categories were assigned inductively, meaning they came directly from the data itself, not from the predetermined theory. Relying on induction is necessary when the purpose of the study is to present interviewees' point of view (Berg, 2001, p.246). In explorative and descriptive research, axial coding is said to complete the analysis because the study does not intend to explain relationships between the different categories (Robson, 2002, p. 495). In this study that proved to be the case since after the first two phases of data analysis no category emerged as the main one.

To summarize the process of data coding in greater detail, below is the breakdown of the process based on Miles & Huberman's (1994, p.9) set of "fairly classic analytic moves". The first step is to give codes to the initial set of materials obtained from interviews. For instance, in one interview when asking about benefits and shortcomings of analytic tools, one respondent replied:

> They always have limitations. I think you can get almost anything from the TNS metrics but still you find that oh well it would be really nice to have this and this information, they are never enough. Somebody asks: what about this information? And we don't have that.

This passage was coded as "analytics always have limitations".

The second step is to add comments, reflections etc. (commonly referred to as 'memos'). For instance, when one respondent was asked about the effects web analytics had on the relationship with the audience the response was:

> That's a difficult one. No direct impact but an indirect one. It means that when the analytics affect the way we write or the way we make headlines or the kind of stories we write and the kind of stories we deliver at the top or on our frontpage, then in the long run it must have some impact on our relationship with the audience.

While this passage was coded 'relationship with the audience' the accompanying memo added: "analytics affect every step of publishing and writing news".

Next, one needs to go through the material trying to identify similar phrases, patterns, themes, relationships, sequences, differences, etc. That stage took place once all data was coded and the codes were assigned to initial categories. For example, since a lot of interviewees said that analytics were important, all of the codes referring to that were put into one category: "analytics are important".

Following the previous step, one needs to take the emerged patterns, themes, etc. out to the field to help focus the next wave of data collection. This phase is difficult to illustrate since the process was not documented and happened gradually and almost intangibly. Mainly, this meant that after each interview it was slightly easier to focus attention on questions that emerged as most problematic or most interesting from the previous interview. As a result, a small set of generalizations that cover the discerned consistencies in the data gradually arise. This phase of the analysis took place when 54 smaller categories were combined over and over until they fit into six overarching ones.

The final step is to link these generalizations to a formalized body of knowledge in the form of constructs or theories. This final stage of the analysis is presented in the next chapter of the thesis.

3.8 Ensuring Validity, Credibility and Ethical Responsibility

There are three methods I used in order to ensure this study's reliability. First of all, I sought transparency in every step I took, particularly in the data analysis. Therefore, this chapter has been put down to systematically describe in detail how the data was collected, managed, analyzed and why certain techniques were preferred over others. Secondly, since the purpose of this study was to derive rich accounts, they are presented below in the fourth chapter through 'thick' descriptions to reflect complexities of the data. Thus, the chapter includes multiple direct quotes to accurately capture interviewees' accounts. However, due to privacy concerns of the interviewees, transcripts of interviews had to remain confidential and therefore the coding matrix could not be included in the appendix of the thesis. Last but not least, this study is written in an open and honest way and was reviewed at various stages by peers as well as thesis supervisor, which has an added benefit when it comes to reliability.

Since this study is built on information provided by interviewees, I as a researcher was first and foremost responsible for treating that information ethically. To ensure that, each interviewee was informed about the nature and objectives of the study beforehand. Due to sensitivity of the data, I guaranteed anonymity to the respondents. Hence, their names and the name of the media organization they worked for at the time were not mentioned on any of the materials. This measure was taken to avoid causing any harm to the interviewees at their workplace and encourage them to answer questions honestly and without reservations. In addition, once the study was complete the results were concisely summarized and communicated to every participant so they could extract some benefit from the findings.

4. Study Findings: Web Analytics' Use in Finnish Online Newsrooms

Analyzing data is a scrupulous process but a rewarding one. Once the interview transcripts were transcribed, coded and categorized, certain themes started arising from the data. Practices around web analytic use started taking shape just like the issues surrounding their use: challenges, power struggle, audience engagement, content quality etc. These topics are discussed below under five sub-sections.

To start the discussion about web analytics, one first needs to understand the kinds of tools one is referring to. Therefore, the first section looks in detail at what kinds of tools interviewed media professionals used in their newsrooms. The second section delves into internal processes utilizing the tools in the newsrooms: who assumes responsibility over collecting the information, how that collection process goes and what happens to the gathered information. Third section discusses what is measured with the tools, focusing on popularity since that emerged as one of the main aspects of online behavior that analytics were used to measure. The narration includes popularity metrics that interviewees shared as well as how that data is implemented in the newsrooms in practice. The fourth section looks at the transformational effects of web analytic tools: how they affect various aspects of news gathering and online publishing. Last but not least, the fifth section looks into audiences. Web analytics have been found to help bring journalists and audiences closer together, which inevitably brings the question of balance and power. Therefore, the last section includes a discussion on both: how to balance what audiences want versus what they need as well as how to balance the decision-making power between audiences, web analytics and journalistic judgment.

4.1 Tools used in the online newsrooms

This section describes the variety of tools employed by online journalists and web editors. This would serve as a foundation for discussing the effects these tools have

on various aspects of online publishing. First, however, I would begin with a few general comments drawn from the collected interviews.

The first observation is that the number and diversity of tools used by a publication greatly depends on the person in charge of the web unit. The more the web editor is curious him/herself about the different aspects of measuring online behavior, the more and the deeper they go into employing and analyzing different tools (Anderson, 2011).

Secondly, I noticed that business media employ a slightly bigger and more varied number of web analytics tools. The reason for this might be related to the first observation: web editors of business dailies like *Kauppalehti* or *Talouselämä* are more likely to have a business or financial background rather than journalistic background and therefore show a more avid interest in analytical tools.

Thirdly, when it comes to controlling the tools, the access and responsibility tends to grow the higher one goes in the professional ranks. In other words, it is usually web producers, web editors and heads of online department that control web analytic tools while journalists either do not have any access to them or have a limited one, granted upon request. However, access to web analytic tools can vary depending on the size of the newsroom. In large online publications like *Helsingin Sanomat* or *Taloussanomat* where the journalistic unit is fairly big, control over web analytic tools usually lies in the hands of web producers and web editors, not staff journalists. But in smaller newsrooms like *UusiSuomi* every staff member can access, use and monitor all the web analytic tools.

4.1.1 Top used tools: Google Analytics, In-house built, TNS and Ampparit

To my initial surprise, each newsroom I talked with not only utilized web analytic tools but usually used more than one type of tool on an hourly basis. Every single media used primarily Google Analytics and an analytics tool that was built in-house or

was included in the publishing system of the outlet. In addition, each publication paid very close attention to TNS Gallup metrics and Ampparit. However, in-house built web analytic tool is probably the oldest and most popular way to measure a news site's traffic. The explanation for this is often the tool's simplicity and ability to show information in real-time. It was also quoted to be more reliable than other tools. Many newsrooms constantly displayed traffic numbers from the in-house tool or from Google Analytics on a big screen in their offices. The reason was to help journalists be aware of how the different stories were being received by the readers.

Google Analytics was highly praised by most interviewees. Its main advantage is the diversity of functions it performs: one can measure everything concerning traffic as well as set certain goals, or funnels, for user paths and see how they work. The ability to use Google Analytics was perceived as so important - some speculated that it would be an obligatory requirement for online journalists in the future.

TNS Gallup describe themselves on their website as Finland's leading market research organization that publishes weekly statistics on the aggregate amount of traffic various websites receive (http://www.tns-gallup.fi/). The information is public and can be divided by industry. Therefore, media organizations can see on a weekly basis how they fare in comparison to their competitors in terms of traffic. Not surprisingly, those numbers were seen as very important by every interviewee not only to assess the competition but also to communicate with advertisers. The more traffic a website receives according to those numbers, the more attractive the media seems in the eyes of advertisers, which in its turn is crucial for the media business.

Another popular tool, Ampparit (http://www.ampparit.com/), is not a software application but in fact a free national news aggregator that collects the latest headlines from all media, publishes the number of times that headline was clicked on and lets users up-vote or down-vote a news item. One interviewee sharply named it "a hall of fame". Ampparit featured in almost every interview since journalists and web editors

pay a very close attention to how the headlines get picked and how they fare on that website. The portal is so closely watched because it provides up to 30% of referral traffic to a news site. One of the interviewees shared their internal benchmark based on Ampparit: if in the first five minutes of being on the news portal the story gets over 100 clicks – it is going to be a popular story. As the interviewee put it: "Ampparit basically defines the success of a story".

Curiously, some of the interviewees were slightly embarrassed to admit just how much attention they paid to Ampparit. They believed it made them optimize their headlines to target the audience of the news aggregator, which meant more sensational, less accurate titles. Those concerns were not unfounded: increase in headline's sensationalism has been noted by previous studies on the use of audience-measuring metrics (Thurman & Myllylahti, 2009; Karlsson & Clerwall, 2011; Strömbäck & Karlsson, 2011; Lee at al., 2012).

4.1.2 Additional tools used

Social media are emerging as important influencers shaping journalism (Hermida, 2012) and therefore are important traffic referral sources for media publishers. Hence, analytics included in the dashboards of social networks were also closely followed by the interviewees. In particular, the number of times a story was shared, "liked" and commented on Facebook were the most important numerical measurements. Attention was also paid to the number of followers the media has and the nature of written comments and discussions that surrounded a certain news item. Facebook was named as a great indicator of a story's virality. In general, traffic referred from another website, be it Facebook, Twitter, Ampparit or Google Search, was seen as a positive thing because it meant the news item was attracting people who were not regular readers of the website. That was also named as one of the main reasons to post and engage with content on those sites. On top of that, it was noted that many journalists derived a personal satisfaction from seeing their stories being shared, "liked" and reacted to on social media. It created a tangible positive recognition of their work.

Some of the media outlets interviewed used additional tools to measure their audiences' online behavior. One of these tools recommends story positions on a website based on their clicks and click-through rates. For instance, if one story received a lot of clicks but it was positioned eighth on the website, the tool would recommend moving the story upwards by calculating how much the website would benefit from that in terms of traffic. It was noted, however, that the tool was not automated, which means there was always a journalist or a web editor who decided whether to follow the recommendation or not. Another interesting tool mentioned by the respondents was displaying a visual "heat map" of the news sites' frontpage. Thus, stories that received a lot of clicks would appear as red areas and the less-clicked areas would appear in blue. As a result, web editor could see in one glance how the different news items were doing and could reposition them accordingly.

Overall, it can be said that online journalists in Finland extensively use different types of web analytic tools. In the next section I am going to explain the intricacies of responsibility over web analytics pronounced in various news organizations and the challenges they bring.

4.2 Who has access and responsibility over the web analytic tools

Access to web analytic tools varied between the interviewed media mostly depending on the size of the newsroom. In some media houses, with a smaller size of newsroom like at *UusiSuomi* or *Talouselämä* the access was universal by default – every journalist had access to every tool used. In other cases, journalists had selective access or the access was granted upon specific request from the journalist. That was the case in bigger media houses like *Helsinging Sanomat*, *Aamulehti* or *Iltalehti*. In still other cases, like at *Taloussanomat*, journalists were not given access to any web analytic tools. However, access to TNS Gallup weekly reports was self-granted in all newsrooms because the data is publicly available online.

Normally a web editor or web producer is in charge of the analytics. He/she collects the data weekly and sends the reports of top stories and traffic numbers by email to the rest of the newsroom. (Daily reports are not commonly used because, as one interviewee said: "Every journalist gets too many emails anyway"). In some cases these reports are also presented and discussed in weekly morning meetings. When the situation requires, the numbers are also discussed ad hoc among colleagues and the management.

In addition, many newsrooms physically display current top stories of the day on screens or on chalk boards in the newsroom. "It is important for everyone to know what's hot among our readers at the moment", one interviewee explained. However, a reluctance to show the exact number of pageviews per story to journalists was pronounced in most interviews. The reason for that was two-fold. First, it was said that seeing those numbers could be painful and disappointing for the journalists. "I'm not sure that every journalist actually likes seeing the top stories and never seeing your own stories among them. So it can be very problematic for some journalists", commented one interviewee.

The second reason for not showing the numbers to journalists was to avoid putting the pressure on them. "It is my job to worry about the numbers", explained one web editor. Other interviewees also voiced a concern that showing the numbers would push journalists to write more sensational news that would earn their stories more clicks but could compromise on the quality of the content and damage the media's reputation. From this perspective, analytics were seen as a threat to journalistic values. However, some respondents avoided showing the numbers to journalists because they simply believed that that information was not of great importance for the journalists' daily work. "I don't think … [journalists] really pay attention to how many viewers their story received", said one interviewee.

In newsrooms where journalists were exposed to that information, the respondents were concerned that the data made journalists more result-oriented and weakened the reporting. This, they believed, risked to lead to more shallow news overall because that was the kind of stories that tended to get more clicks. "It's possible that actual heavy, important stories don't get as much attention as the lighter, more quirky stories that people tend to click", admitted one respondent. "The risk is that we become shallow and make niche headlines and forget the rest of the news", shared another interviewee. Still another respondent noted: "I'm afraid that it might also lead to the point when (not here but somewhere else) you make only '*tissiuutiset*' ('boob news') because they are popular of course".

As for analyzing the data collected from the tools, in most cases, it was the web editor or the head of the online department bearing the responsibility for "making sure the numbers look good", as one interviewee put it. This included not only collecting and communicating the data but also balancing the types of stories that get published to ensure "a good mix" (i.e. a balance between soft and hard news items). Only a few of the interviewed media houses (*YLE, Helsingin Sanomat*) had a separate team analyzing web analytics and therefore benefited from in-depth analysis on demand. The journalists or web editors could request a report regarding a topic or sub-section whenever they felt the need and share it with other colleagues. The main benefit was in getting the knowledge that would otherwise be hard to get. "I think it's very good that we have this unit because the analytic needs can be very specific so it's a good thing we have professionals for doing this", shared one interviewee.

On top of sharing the overall numbers in weekly reports, some media houses also did deeper reports based on the analytics monthly, quarterly or biannually. These reports would be carried out either by the web editor or by a special analytics unit. The point of the reports was to identify trends, do audience profiles, check for things to improve and acknowledge successes – in other words to learn from the numbers. However, as

many interviewees pointed out, it is hard to predict the future based on these numbers, one can only try to learn from them.

4.2.1 Challenges of Interpreting the Acquired Data

One of the most important parts of utilizing web analytics is the ability to interpret the data they gather. That also turned out to be the most problematic part of using web analytics as every single respondent confessed having constant challenges with using and interpreting the tools, saying that web analytics always had limitations.

The first difficulty of interpretation started from the different tools themselves: different web analytic tools were said to measure traffic differently. "Why [does it show] more visitors on this article when we see [with another tool] that more people are reading another? It is hard to measure", complained one respondent. In addition, interviewees pointed out how challenging it was to measure different IP addresses, mobile and desktop browsers. "If you read one thing on your mobile phone and you read another article on your computer, are you then two different readers or the same reader? We can't measure that", said the respondent. As pointed out in the Introduction of this paper, the difficulty of measuring, relying and trusting web analytic tools derives from the lack of industry-wide standard: various tools measure different things through different techniques and criteria (Graves & Kelly, 2010).

On top of that, many respondents complained about the technical problems web analytics had. The fact that web analytics get renewed more often than the publishing systems means that technical difficulties arise when trying to integrate a new tool with an old system. As a result, some interviewees admitted to using older versions of tools because they worked better, web publishers were used to working with them and their user interface felt more intuitive and clear to them. Naturally, all tools break at some point, and according to the interviewees, the more complicated the tools get, the more complicated the technical challenges get every year.

When it comes to interpreting and understanding the reports from web analytics, many of the respondents confessed to not fully understand them. "I have used it in the wrong way different times. I thought this is the most read and then someone came and said: 'No, no, no, you shouldn't look at this information, you should look at that'. It's kind of hard", commented one interviewee. Another respondent said that not being a web developer it was hard sometimes to interpret the data and even when asking web developers they would not be able to answer certain questions. Still another interviewee mentioned the lack of time and knowledge to analyze the data further as a current limitation for them, saying that it would be helpful to have some training on that. "Using analytics is just trial and error", the respondent concluded.

4.2.2 Web Analytics' Limitations

In addition to difficulties of interpretation, the issue of trust was also raised: some respondents felt they could not rely on the numbers provided by some tools. As one interviewee put it, the general feeling they had was that the more you pay for advertisements on Google, the more visible your article would be in Google Search. Another respondent complained about TNS metrics because at a certain time it did not count people who visited their page through the Safari browser, which comprised quite a large proportion of the media's readers. Still another respondent also complained about the TNS metrics because their numbers were based on a calculated estimate rather than on actual number of visitors to the site.

No web analytic tool is perfect and when it comes to utilizing them many respondents felt that existing tools left out some important information. For instance, in some news websites many readers never clicked on anything but simply scrolled through the page looking at headlines and story leads. The journalists were lacking tools to measure the reading path of such readers: how and what stories they browsed through and what they read after seeing those articles. One respondent complained that despite the tools having many useful features, one could not always analyze that information deeper due to time constraints and there was always information the tools did not measure. The most common information journalists wanted but could not get

from the tools were the assessment of the story's quality and the reason driving certain stories to popularity. "What I wish to see is why people click on those articles", said one respondent.

Important to remember here is that the use of web analytic tools in newsrooms is only at its beginning. The field of web analytics is still evolving, many respondents felt, hence they talked about the need for better, more precise tools. 'I think there's lots to be done there and this is just the beginning the way we are doing things nowadays', concluded one respondent.

While criticizing existing web analytic tools on the one hand, respondents voiced concerns of becoming too dependent on these tools on the other. Every interviewee talked about the importance these tools have assumed in their daily work and the fear that traffic numbers might start dominating their decision-making. "That's one challenge absolutely: not to be the slave of these tools. […] We don't want to be slaves to those analytic tools", said one respondent. The notion of dependency and audience engagement will be discussed later in this chapter.

4.3 Measuring Popularity with Web Analytic Tools

Measuring traffic is extremely important for online media. As one interviewee put it: "There is basically no option for online media not to measure the traffic". The numbers are sometimes quite surprising – "you never know what people find interesting", commented another interviewee. But many respondents concluded that seeing the actual numbers of readers is one of the best parts of the analytics. Thanks to the web analytic tools every aspect of online behavior is much more measurable.

Interviewed journalists and editors had conflicting ideas of what the abundance of this measurable data means for their work. Some thought that the numbers push them to see their audiences as clicks. Others believed the numerical data helped them measure

the value of their work as journalists. Still others were careful about assigning much meaning to the numbers, suggesting that they do not tell the whole story.

The biggest aspect of online behavior that web analytics were said to measure was popularity. This section will describe the different aspects of popularity web analytics help to measure, followed by a brief explanation of how that information was used in the studied newsrooms.

4.3.1 Popularity Metrics

There are quite a few things that journalists described measuring on a daily basis. Most of them fall under the concept of popularity expressed through unique pageviews, unique browsers or clicks per individual story, a section or the whole website. Unique pageviews and unique browsers were quoted by many respondents as two of the most important metrics they look at and constantly check throughout their working day. The total number of visitors to the website was named equally important. Measuring these basic metrics is universal in all newsrooms: big or small, private or public broadcasters. These numbers are also compared nationally with other media thanks to the data from TNS Gallup metrics. In addition, media's managers often use these numbers to set traffic targets and measure the media's online performance.

Most interviewees also measure top stories per day or for the whole week. Some commented that often the top stories are lighter news items. In addition, most respondents track the number of times a story has been shared on social media. Some media like business dailies *Talouselämä, Kauppalehti, Taloussanomat* mentioned comparing these and other numbers to previous weeks to track a longer-term visitors' behavior. "Occasionally, we also track how and how many people scroll through our frontpage to check if it's too long or too short", added one interviewee.

Respondents from smaller newsrooms like *HBL* and *UusiSuomi* list and learn from popular keywords that bring them traffic through Google search and those that appear in their article's headlines. Turns out, a certain word can bring a fairly big number of clicks every time it appears in the headline of a story. These words can be names of certain politicians, of holiday celebrations or something fairly generic like 'Finland' ('Suomi').

Other media publications also track the number of stories they publish to see how it correlates with the number of pageviews that the website receives. Though churning out more stories generally tends to bring more traffic, at a certain point "the relationship is almost inverse", said one interviewee. Though not explicitly said, this could be due to the decreasing quality of content caused by the increased speed of publication.

Further on, most interviewees track traffic sources, referral sites as well as geographical and time distribution of traffic. The latter two are the least followed since geographical distribution of traffic does not change much overtime and does not really affect the types of stories a media would publish. Time-distribution was followed by some interviewees to know when to increase the number of stories to be published.

Traffic sources and referrals are followed quite closely by many respondents including *YLE*, *Taloussanomat* and *Iltalehti*. "It's good if [readers] come from Google or Ampparit or Facebook because then they don't have to know about us in advance. It's good to advertise [our content] in different places", commented one interviewee. However, other respondents mentioned that one needs to really dig through the web analytics to find out what is really driving the traffic.

Media outlets that had a paper edition co-promoted their online stories in printed papers and vice versa to derive more traction and bring traffic to their websites. For

instance, top stories from the website would be listed in the next day's printed edition. One of the biggest benefits of doing that is to remind subscribers of the written paper about the online version and potentially drive more traffic to the website. At the same time, interviewees pointed out that there is a difference between the type of news that are published online and in print. Online is used more for immediate news, whereas paper version includes more analytical and opinion pieces

Last but not least, time spent on the website is becoming more important for the media. "Advertisers today are more interested in the amount of time readers spend on our website than in, as far as I know, the number of clicks we get", said one interviewee. However, it was also mentioned by other respondents that trying to keep readers on the website is a continuous struggle.

To finish this section, I will mention a few popularity metrics some of the interviewees gave as benchmarks to measure a story's success. One metric was mentioned earlier: 100 clicks in the first 5 min of a story's publication is a good indicator that the story is doing well. Less than 1000 clicks per story per day was considered a bad day in terms of traffic by one publication. Another mentioned that if a story got more than 100 active viewers per second, then the story would become very popular.

Overall, all interviewed media were interested in measuring popularity though to a different extent of accuracy. Finnish public broadcaster, *YLE*, and online editions of popular print papers like *Aamulehti, Helsingin Sanomat, HBL* and *Iltalehti*, for example, measured mostly basic traffic numbers on a daily basis but did not talk extensively about the different aspects of their visitor's behavior. Whereas business media and online-only publications like *UusiSuomi, Taloussanomat, Kauppalehti* and *Talouselämä* were quite eager to share their metrics of popularity and the benchmarks they had.

4.3.2 Ways the Data Collected from Web Analytics' Was Used

Three aspects arose when talking with the interviewees about what the data collected from the web analytics was used for.

First, collected data was used by the media's marketing department. Dependency on advertising in most of current media's business models makes traffic numbers from analytics important. The numbers are used by the marketing department and the managerial team to sell advertising and monitor if their investments are paying out. The numbers are often benchmarked against the competitors: the more viewers the homepage attracts the more valuable the advertisements become and therefore the more the media company can charge for placing the advertisements on their website.

In an ad-driven business 'good numbers are everything', commented one respondent. However, another interviewee pointed out that even if or when the media would change their business model to paid content, web analytics would not cease to be important but might actually grow in importance. Under that business model it would still be paramount to capture readers' behavior to deliver quality content for customers.

Secondly, data collected from the web analytic tools is used for long-term strategic decision-making. Analytics offer an endless opportunity that, if approached the right way, can help media professionals improve and develop the content they offer. Since resources to analyze and study web analytics in most media houses are limited, this needs to be approached strategically. For instance, one interviewee described studying the data as part of the analysis to determine what role Facebook should play in their publication's strategy and how best to utilize it. Another respondent described studying that data to uncover the topics that are trending among the readers or themes that are growing in popularity. Whenever such a trend was found, the web editor created a separate tab on the website's homepage to collect all the stories

related to that topic in one place. This made it easier and faster for the readers to find all the latest information about that topic.

However, some respondents were cautious not to give too much importance to the information they extracted from the tools, arguing that following that data too closely risks departing from journalistic values. Therefore, many claimed that web analytics were not in any way the determinate factor when developing their newspaper and its content.

Last but not least, information extracted from the web analytics has clearly shown the need to act fast online. Having access to readers' behavior in real-time is a huge benefit because it helps web editors and journalists to get an immediate reaction when publishing a story and check if its headline is working. "Online people look for what is important in this very moment: it's too late to react to that instinct the next day […] You have to do it immediately, then it works best", explained one respondent. The importance of this immediacy was clearly visible when visiting the studied newsrooms: almost all of them had a few big screens constantly showing the number of active users the website had or the rankings of their top stories at that very moment.

The emphasis on speed and immediacy has its shortcomings, however. It makes journalists' work busier since they have to constantly check traffic data and modify their work accordingly. But more importantly, it lowers the barrier for making mistakes since any error can be quickly and easily corrected at any moment. "It is easy to act fast and check facts later, though it's not a good thing and something that every journalist should be careful of", commented one respondent.

Despite its shortcomings, the data collected from web analytics is helpful because it lets journalists adjust their work based on real-time information of their readers' behavior, improving the overall result. An example of this is the duration of time a story is kept at the top of the front page. Normally the top story is kept for three or

four hours, but if it brings a lot of traffic it stays at the top of the page for up to six hours. Similarly, if it does not bring much traffic, the story is moved down after about two hours. As one of the respondents explained: “Top story is the most important space on our website and if a story is not doing well it’s basically wasting space”.

4.4 How Web Analytics Impact Journalistic Content

When asked directly, most respondents denied that data collected from the web analytic tools affected their stories. However, when defining the question in more details, it appears that the data in fact impacts three aspects of the published content: the website’s frontpage, the choice of stories and the story’s headlines.

Firstly, analytics were said to be essential for people in charge of the media’s frontpage since they helped to determine the right stories to deliver at the top of the page. “If it seems like a hot story for some reason, we try to adjust our website accordingly so that more people see it”, explained one respondent. Since content and traffic are interconnected, interviewees explained how stories were repositioned on the website according to the amount of traffic they got. If a story’s popularity was rising, it was more likely to be put higher up on the website and be kept there longer. If a story was not getting much traffic, it would be put lower and lower until it would finally be discarded from the site. It is important to remember, however, that where the story was positioned in its turn affected how popular it was. Web analytics were also used to decide on the main story. ‘Before we had that tool, two and a half years ago, the decision-making was more reliant on “maybe this could be it”. But now we can see how popular something is. It's huge for journalists’, commented one respondent.

Apart from helping to determine which story to choose as the top-of-the-page story, analytics affected the story’s overall lifespan based on the amount of traffic it brought. For instance, if the main story would be losing the number of readers: “We would

think if we have anything else that could work as a main story that would attract more readers", said one interviewee. In other words, if the story wasn't very popular, it was slowly discarded from the website. However, if a story proved to be popular for a while, it was kept on the website longer. Consequently, unlike previous conviction that warned against having old news on the website, journalists could keep an item on the webpage for days if it still attracted readers. One respondent gave a great example of this:

> There was a story yesterday (Monday) that was published on Saturday and I thought it was a really old one; we can't have it on the page anymore. But then I saw at Google Analytics that a lot of the people are still reading it and discussing it. So I just let it be there at the news block, quite high on the page because I saw that it's still popular.

Secondly, analytics partially influence the type of stories that get covered. "We don't really think about it but we still know [certain] things could be more read so we write accordingly", admitted one interviewee. While this cannot be solely attributed to analytics alone, the need to drive traffic to the website does affect the areas journalists chose to cover (Currah, 2009; Thurman & Myllylahti, 2009; Lee et al., 2012). For instance, one interviewee noted the rise of the classical news stories like crime to be in higher demand than previously, which in turn made the media cover these stories more. If a story type is not read by many people, journalists stop covering them. Similarly, if a story is popular for a while, journalists might write a follow up on the same or the following day. They might also pick a similar subject in the future or write a story from a similar angle.

Thirdly, by far the biggest impact web analytics have is on news titles because journalists tend to alter story headlines based on the traffic they receive. Moreover, news headlines are often constructed in a way that would compel readers to click on them and as a result drive more traffic to the website. Often that means writing a catchier, less descriptive and more intriguing headline to tease readers' interests and make them click. Some interviewees confessed to writing headlines that would target audience from a specific website like Ampparit (as noted earlier in the chapter, Ampparit.fi is a news aggregator that brings up to 30% of traffic to online media)

"We've noticed that the catchier headline you have, the more traffic you get from Ampparit. So we try to adjust our headlines often so that they suit the Ampparit audience very well", explained one respondent.

Online-only media like *UusiSuomi, Talouselämä* and *Taloussanomat* took the headline construction as one of the main points of differentiation between them and other media. Constructing the right headline was said to be so important for them, they admitted to spending about one-third of their work on coming up and adjusting the title. "We distinguish ourselves by having titles that are as interesting and as clickable as possible", one interviewee said. While other media criticized this approach, all respondents admitted going to the same direction with their titles.

Hence, it can be said that the data available from the web analytics has prompted a race for clicks expressed in a headline competition. "I am sure it's not just us", commented one interviewee. "Everyone notices that with the crazier headline you can get very good results". This quote encompasses one of the big challenges that arises due to this competition: the priority to get more clicks pushes media to create titles that draw attention rather than describe a story.

However, analytics are not the only reason news headlines have changed online. As one of the respondents pointed out, a bigger reason for that change is the way people consume content online. "Readers don't click on a story to see if there is something rewarding at the end", one interviewee said. "The point of the story needs to be in the headline or in the lead". Therefore, making headlines appealing is not solely about driving the traffic but also about making the content itself appealing to the reader. The interviewees mentioned humor or a certain angle on a story as some of the means to make the story title appealing: "People react very positively to headlines with personality", one respondent commented.

When a story is not very popular according to traffic, the first thing journalists do is adjust the headline. "If a story turns out to be a flop, we often change or tweak the headline to see if headline-changing actually works", said one respondent. However, the tweaking does not always work so journalists try to share the story more widely and if it still does not get traction, the story is put lower and lower on the website until it finally gets discarded. These cases provide a great learning opportunity according to the same interviewee: "It is very useful to learn from a story that bombs or goes badly. It tells you something: either that the headline doesn't work or the story's subject or the angle on the story".

However, in some cases adjusting headlines can go too far. "If a story is very boring, you can't have a flashy headline. That's cheating", one interviewee said. More than anything, the race for clicks appears to be the negative outcome of the popularity of list-based news aggregators like Ampparit that rank stories based on clicks. If media companies want to be in the competition, it seems they need to alter their titles according to traffic numbers. From this perspective, titles can be viewed as marketing mechanism for the media: "Titles are shared all over the Internet and we want people to click on them", said one interviewee.

However, tweaking titles can also drive traffic in a positive sense because a good headline has always been an important part of a story. Clicks and titles are interconnected not only because race for clicks produces catchier titles but also because better titles can interest the reader and capture their attention. "It's good to have good headlines – otherwise people won't read the news", one responded commented.

4.5 Audience Relationship: Web Analytics Bring Audiences Closer

An important impact web analytics have is on the relationship between audience and media by bringing them closer and as a result improving journalists' understanding of

their readers as well as raising their respect for readers' opinions. Analytics help journalists and web editors learn what people are actually interested in and what they would like to learn more about. "We are getting a better look at what kind of people are reading us and what kinds of stories are important for them", noted one interviewee. The ultimate hope is that this information would help media workers understand their audiences better, which is important because the overall success of any media publisher is dependent on attracting audiences (Strömbäck & Karlsson, 2011).

The tools also give a measurable aspect to the relationship with readers. Now that journalists can really see the number of readers and their preferences online, they have to respect and listen to their opinions, otherwise their relationship might suffer.
On the negative side of things, many respondents admitted that their audiences complained about the headlines they write or the lack of hard news or analysis. Though respondents talked about readers' opinions, it was somewhat implied that to a certain extent they agree with the complaints. Not surprisingly then, audiences complained that these practices damaged reputation of the printed newspaper if it was known to be a serious publication like *Helsingin Sanomat*. The interviewees defended themselves against these claims by pointing out that web version of the paper had little to do with the printed one: they abide by different rules – what works in print does not work on the web and vice versa.

Once audiences are brought closer, the question of power dynamics between readers and journalists emerges. Audiences today have more power to influence the editorial process because media has a more detailed view of their online behavior that they pay close attention to (Strömbäck & Karlsson, 2011; Anderson, 2011; Lee et al., 2012). "[Since] we get to compare different Finnish websites all the time every week, in that way the tools give certain power to the audience because we have to bow to the audience's demands more", commented one interviewee. If readers leave a website, they have the power to bring it down, which definitely puts them in the position of

power. However, that applies to any media, online or printed one, so it cannot be attributed to web analytics alone.

What readers can and do influence is the kinds of topics media chooses to cover. Many respondents noted that if a certain subject or theme is important for their readers, they would cover it since they viewed it their duty to serve their readers (or customers) better. This was voiced particularly in commercial media like *Iltalehti, Taloussanomat, Helsingin Sanomat* and *Aamulehti*. The things readers are interested in undoubtedly affect the way stories are chosen and reported. "As a reader, I have more influence and power over what kinds of things the media covers because they have a much more detailed and nuanced view of what kind of a reader I am", said one of the interviewees.

At the same time, many of the respondents questioned the extent to which their audiences truly hold the power. Readers do not see the numbers from web analytics and most are unaware of how much media rely on the analytics. Therefore, it is hard to say how much power they really gain from the analytics. "I don't think readers care so much about how many visitors we have", noted one respondent. Thus, although readers' online behavior is closely followed and reacted to by the media organizations, the power it gives to the readers is mostly passive. It can be said that readers do vote with their clicks but they don't do it consciously or with a set agenda, which limits the power they hold over journalists. Web analytic tools are merely a tool in this transaction, not a driving force of the process (Karlsson & Clerwall, 2011).

4.5.1 Balancing Audience Needs and Desires

Due to the easy access to numbers and due to their importance for the media organization, web analytics have contributed to the daily struggle journalists faced: how to balance important news versus popular news, things that people need to know and items that they would enjoy reading. Naturally, this dilemma has existed in journalistic work before even the Internet came along, but web analytics have made the struggle more pronounced since now one can see very clearly which stories are

popular and which are not. The question of doing business as a media company versus doing journalism has emerged as the biggest struggle all interviewees talked about. "It's a daily balancing act", explained one respondent. "We have to struggle with these questions every day", said another.

The biggest help in drawing the balance was experience: most of the interviewees who were in charge of creating the balance have worked in media for ten years or more. "I have worked here for fifteen years, I know nowadays what's important and what's not", noted one respondent. On top of experience, media's values and vision were used as a guideline when creating the balance.

When talking about the balance, most interviewees inevitably kept coming back to the problem of news tabloidization. "It's a daily struggle how much weight to give to generating traffic as opposed to doing things in a satisfactory way". Thus, every interviewee struggled with wanting to generate traffic for the publication but not wanting to write sensational content. Partial exception was *YLE* where journalists still paid attention to and tried optimizing their traffic numbers but their priorities of balance were more clearly defined since it is a public service broadcaster.

Helsinging Sanomat, Kauppalehti, Talouselämä, HBL and even *YLE* struggled with the demands of bringing more traffic and the damages that could bring to their brand's reputation. As one interviewee put it: "Shall I spend more time on this or that story if I know beforehand that that story might do better according to statistics?" In the end of the day, it is up to the journalist and the editor to decide and maintain the balance.

At the same time, many respondents struggled with defining what exactly important news is because that tends to change over time. Certain news like big events in politics or economics are fairly unproblematic, but most daily news fall into grey areas that can be difficult to categorize. In this respect, web analytics add to the complication because they highlight news that are popular by the number of readers. Many

respondents referred to this as a danger of forgetting real journalism how they understand it. "'We do what people want approach' takes away from journalism", commented one interviewee. Thus, journalists need to be careful of what decisions they make based on the data provided by the web analytics, especially in unclear and conflicting situations. In most cases, however, the interviewees side with their media's vision to resolve the conflict, not with the numbers provided by the analytics. The reason for this is not only company's image but journalistic values in general: bringing readers new ideas and alerting them to trends they are not aware of is described as one of the most important values in their work.

That said, some respondents defended the opposing point of view: it is not intrinsically bad to write about things that people like and are interested in. One of the positive things data provided by the analytics does is to make journalists more aware of their audience. In the end of the day, big part of media's work is to cover subjects that their readers are interested in. Otherwise, why and for whom would the media write? This clearly demonstrates the kind of daily struggle interviewees face in their daily work.

As has become apparent by now, analytics affect journalistic work but are not the sole factor in decision-making. Every respondent noted that they simply cannot make decisions only based on the numbers they get from the tools: they need to consider other things. One interviewee jokingly noted: "We'd probably then just publish for two years naked pictures of ladies if we'd only be looking at what is bringing the most traffic to our site".

4.5.2 Web Analytics Problematize Power

In a world where audiences are brought together and their needs increasingly need to be accounted for, the question of power inevitably needs to be discussed. Every interviewee emphasized that journalists should be the ones to decide what to publish and they should be guided by their objectivity, not the race for clicks. Numbers are

important but one cannot follow them blindly if they wanted to keep their integrity (Lee et al., 2012, p.6). “We want to keep the decision-making power to ourselves, not give it to analytics”, explained one respondent.

However, even if one was to heavily rely on numbers, it would not automatically bring traffic. People’s tastes and interests change, sometimes abruptly and most often unannounced. Therefore, past numbers from web analytics do not provide a magic formula that one can follow to get desirable results. One can learn from certain information but one cannot use it as a guideline for future work.

Apart from not providing a silver bullet to news publishing, following the numbers to maximize clicks is a risky strategy. In its worst case, it leads to journalists missing out on important stories that are bubbling under the radar. Thus, following the data provided by web analytics needs to be done carefully. “I don’t think we should let those numbers rule what we do and we don’t”, said one respondent. “We can’t take the pressure and yield to it”, commented another.

These statements, however, need to be taken with a doze of criticism since hardly any employed journalist would grant the majority of their decision-making power to their readers. Keeping power to themselves is an answer they are expected to give by the code of journalistic ethics regardless of whether it is accurate in reality. Besides, while interviewees proclaimed their objectivity and claimed they are not guided by the analytics, in practice many of them followed the numbers frantically and adjusted their work accordingly. Therefore, web analytics definitely played a pronounced role in the daily work of media professionals.

Bearing that in mind, every publication compared their metrics with the competitors’ numbers on a regular basis. “Analytics wipe out the losers”, one respondent said, which eloquently summarizes the reason why media organizations do the comparisons – it is important to beat the competitors in terms of traffic. “If our competitors have

more users, we see what they have done", said one interviewee. Consequently, if one story topic was trending on one site, others would pick up the subject and write their own version of the story. The biggest risk of this strategy is that media landscape would become an eco-chamber where media mimic each other instead of adding diversity to the content. Advertisers were directly and indirectly referred to as the driving force behind these trends: "We need to make money and advertisers see the numbers", confessed one respondent.

However, when it comes to stories deemed important by journalists, all respondents saw it as their duty and responsibility to cover important, hard stories regardless of their popularity. "We need to provide serious, big news even if not many people read it", said one interviewee. Such items would often be put at the top of the news webpage and kept there regardless of the number of readers. This was especially pronounced in *YLE, Helsingin Sanomat, Talouselämä* and *Kauppalehti*. Respondents seemed to have pride in defending the importance of 'heavy' news: "I think all, or nearly all, journalists want to be independent and write stories that they think are important", commented one interviewee. Truth and integrity was seen as the main differentiator between journalists and amateurs, hence it was important to follow these ideals.

Thus, even though traffic numbers play an important role in decision-making, it can be said that news still generally comes before the clicks. Analytics do provide useful information and are an inevitable part of media business today but the decision-making power stays in the hands of journalists and editors. Brand, image and reputation of the media publication were described by the interviewees as much more important than the traffic numbers web analytics provided.

5. Discussion and Concluding Remarks

This study was set up to discover how web analytic tools are used in Finnish online newsrooms and how their use affects relationship with the audience and journalistic content. One of the most important overall findings is the fact that the use of web analytic tools does affect journalistic work, which is consistent with previous studies (Anderson, 2011; Karlsson, 2011; Strömback & Karlsson, 2012). As to the extent of the impact web analytics' use has on the journalistic work, the conclusion is similar to that reached by Karlsson's (2011) study of Swedish online newsrooms: use of audience-measuring metrics is one parameter among many that influence journalistic work. Another important finding consistent with previous research (MacGregor, 2007; Anderson, 2011; Lee et al., 2012) is the fact that in Finnish online newsrooms journalistic judgment increasingly consults audience-measuring metrics. MacGregor (2007, p. 294) discovered that journalists 'doubled-checked their instinctive guesses with tracking data' and Anderson (2011, p. 563) concluded that audience measurement metrics increasingly influence "the process of 'deciding what's news'". Similarly, journalists interviewed for this study talked about relying on analytics data to find out their reader's preferences that would later on be taken into account when deciding what news stories to publish.

To answer the first sub-question (What is the perceived impact of web analytics' use on the relationship with the audience?), this study discovered that the biggest impact web analytic tools seem to have on the relationship between journalists and their audience is bringing them closer together. Interviewed journalists expressed a desire to understand their readers more in order to serve their interests better. Seeing their online behavior on a daily basis and in clearly expressed numerical form helped them notice trends and track readership patterns. Thus, similar to Anderson's (2011) findings, audience is perceived to be active and growing in its influence among Finnish online journalists. However, the extent of the audience's power is unclear because most readers are unaware of how much journalists rely

on audience-measuring data and most of the time readers consume media without a set agenda.

Regarding the second sub-question (How does the use of web analytic tools impact published content?), this study revealed that similarly to previous findings (MacGregor, 2007; Anderson, 2011; Karlsson, 2011; Lee et al., 2012), journalists in Finnish online newsrooms are reluctant to give away their decision-making power of what content to publish and struggle to negotiate a balance between serving their audiences and publishing content they deem important. All the interviewees discussed at length the difficulty of balancing the mixture of items they choose to cover. On the one hand the need to drive traffic pushes journalists to cover content that is softer and more entertainment-oriented; on the other hand the need to maintain a publication's image as a reliable news source requires journalists to continue covering hard news and serious subjects. Keeping the balance between these two sides has become big part of online journalists' and web editors' daily work. *YLE* and more tabloid-oriented *Iltalehti* have more clear lines to draw the balance: the former due to their duty as a public service broadcaster, the latter due to their already existing entertainment-orientation. All the other news media fall into a grey area where drawing the balance is a daily struggle. Even though all interviewees were paramount about keeping journalistic values and not succumbing to the pressure web analytics put on them, they all followed the traffic numbers frantically and adjusted their work accordingly. That said, it was clear from the interviews that web analytics were helpful tools that editors and journalists relied on but that did not dictate news agenda and were not the driving force of news publishing. Thus, despite the increased reliance on web analytic tools, journalistic values and judgment seem to persist to be paramount to news production in Finnish online newsrooms.

As for the overall research question (How and to what effect are web analytics tools used in Finnish online newsrooms?) this study has found that the real-time numbers

provided by web analytic tools are most widely used to help decide how to handle individual stories on an immediate basis. In particular, traffic numbers help journalists and editors decide how long to keep a story online or how to prioritize the positioning of stories on the website, which is something previous studies discussed too (MacGregor, 2007; Karlsson, 2011; Lee et al., 2012).

What is intriguing and novel is the fact that the biggest impact these metrics were found to have is on story headlines. Every journalist interviewed for this study mentioned watching the initial reaction a story receives from readers based on the traffic numbers. If the story is not receiving much traffic, the first thing a journalist does is tweak the headline. Amplified by the prominence and popularity of a national news aggregator – Ampparit, which is responsible for bringing up to 30% of all traffic to media websites, this has led to a sort of competition on most clickable story headlines. Every news media included in the study admitted altering story headlines but online-only media publications like *UusiSuomi, Taloussanomat* and *Talouselämä* (who have a printed edition twice a month but their daily business news are published only online) put considerably more effort and resources into creating and perfecting headlines to help bring more readers to their websites. Though not explicitly mentioned by the interviewees, the reason to alter a headline is often based on the journalistic judgment that the story is important to be read. This is consistent with what Karlsson (2011) concluded in his study of Swedish newsrooms: "the click plays the biggest part when they *diverge* from journalistic expectation" [original emphasis]. In other words, when journalists expect certain news stories to be read but few people read them (which most often refers to serious, 'hard' news), journalists are more likely to tweak the story's headline in an effort to draw more attention to the article.

The size of the online newsroom seems to play a big role in affecting how web analytic tools are used on a daily basis. Bigger publishers like *YLE* and *Helsingin Sanomat* have a separate unit responsible for analyzing readership metrics, which

means that online journalists do not emphasize metrics data in their daily work. Smaller and online-only publishers like *Talouselämä*, *UusiSuomi, Taloussanomat* and *HBL* need to incorporate most of the data analysis into their daily lives and therefore pay a lot of attention to the numbers provided by the metrics and are more likely to act on them.

The distinction between commercial media and public service broadcaster in the way they use and are affected by web analytic tools was found to be less pronounced in Finland than in a similar study conducted in Sweden (Karlsson, 2011). Karlsson (2011) described in his findings that commercial media relied more on the metrics for economic gain, whereas the public service broadcaster used the metrics less and justified the choice of published content through relevance to their readers. However, this does not seem to be exactly the case in Finland. While *YLE* does publish certain content regardless of its popularity because of their duty as a public broadcaster and they do not maximize traffic numbers at all costs, they still pay close attention to audience metrics in real-time and alter headlines in a similar fashion to broadsheet commercial media like *Helsingin Sanomat*. That being said, compared to *YLE* commercial and tabloid media have much more freedom to experiment with the wording of the headlines to make them more provocative and sensational.

One of the commonly discussed problems with using web analytic tools among the interviewees was the difference between the tools: due to the lack of industry standard different tools measure visitor data in different ways. This aspect of web analytic tools is discussed in great depth by Graves and Kelly (2010) who conclude that this confusion can be overcome by educating journalists to "navigate the chaos of data about online audiences" (Graves & Kelly, 2010, p.5). The need for more information on how to interpret and compare the different numbers was mentioned by a few interviewees in this study, particularly from those newsrooms that started using web analytic tools fairly recently.

It was not clear from the collected findings that following audience-measuring data in itself leads to a more populist news agenda. But the collected data does demonstrate that tracking audience by clicks leads to more populist headlines. Interviewed journalists sought to continue publishing as much 'hard' and serious news as they deemed necessary but they sometimes tried to mask less interesting items with more appealing headlines. While admitting that manipulating headlines in this way is not ideal, many interviewees conceded that it is necessary due to the tough competition for traffic online.

Overall, it is clear that a lot of this study's findings confirm previous research on the use and impact of audience-measuring metrics on journalistic content and relationship with the audience. Thus, changes happening in American, British and Swedish newsrooms can be found in the Finnish context. However, findings from the conducted interviews did not establish a clear causal relationship between following web analytics' data and tabloidization of news. It appeared that audience-measuring data itself played a peripheral role in larger changes occurring in online media space and other factors, like media's search for different business models, were more at play. This point of view has also been expressed by Strömback and Karlsson (2011), who concluded that even though changes in journalistic content and audience relationship are driven by metrics, the overall changes are more due to a combination of other factor, particularly commercialization of media.

To add to the previous body of research, this study described a more nuanced use of web analytic tools in daily work of different online newsrooms. Despite the lack of the industry standard on web analytics, most Finnish news media trust TNS Gallup Metrics for measuring weekly aggregate visitor metrics and comparing those with competitors. Internally, most news rooms rely on a combination of an in-house built web analytic tool, Google Analytics and other suitable metrics. Ampparit is included in the list of influential web metrics due its considerable

popularity among Finnish audiences. This study also exposes the intricacies of access and responsibility over these tools, showing that web editor's interest in web analytics affects to what extent their use is implemented in daily work and that the size of the online newsrooms affects whether or not staff journalists have access to internal web analytics. On top of being used for immediate handling of individual news stories, data collected from the web analytics is also used for strategic decision-making. Aggregate visitor data is used to analyze emerging trends, notice topics that readers are interested in or discovering sources that bring traffic. Online strategy of every news media seemed to include some reliance on the numbers provided by the web analytics. Last but not least, web analytics' are shown to be of great importance for the marketing and advertising departments who heavily rely on the data to communicate with their customers and bring revenue to the news media.

5.1 Challenges and limitations

Conceptually, the biggest challenge in conducting this study has been the novelty of web analytic tools both in terms of research in media studies and their practical use in online newsrooms. So far studies concerning audience behavior online are scarce and do not encompass the different aspects of audience-measuring technology. As for the tools' use in practice, many of the interviewed journalists and editors started using them fairly recently and expressed the need for better understanding of how to use the tools for the biggest benefit and the least harm to their work.

Even though the study included biggest Finnish national media, it is hard to judge whether opinions and perceptions of interviewed journalists and editors are representative of their whole news organization or of the Finnish news media in general. This is particularly the case in bigger news media like *Helsingin Sanomat*, *Iltalehti* and *YLE* where news units are big and many individuals are involved in the decision-making process. Besides, since the individual accounts were collected,

analyzed and interpreted by one individual, there is a risk that the researcher's own biases or preconceptions affected the processes.

Since this study heavily relies on descriptive personal accounts of specific individuals, it is also hard to draw generalizations beyond the included media houses and beyond the Finnish market. However, since some of the same conclusions were reached in studies on Swedish and American newsrooms (Anderson, 2011; Karlsson & Clerwall, 2011; Strömback & Karlsson, 2012), it is possible that processes and effects of web analytics' use and impact in Finnish newsrooms are similar in other countries.

The fact that this study looked exclusively at web analytics' effect on news production and audience relationship excluded the analysis of other factors' importance in these processes. As the findings show, web analytics are not the drivers of change in the online publishing process but rather are one factor among others. Therefore, some of the effects on audience relationship and journalistic content can also be attributed to other factors than the use of audience-measuring data.

Since the study inquired about journalists' and editors' opinions, their applicability to reality was not assessed. This is a limitation because voiced opinions are not always consistent with actions and they also are not always transferrable so practices of implementing the tools and balancing the news agenda in the media organizations could change should the interviewed people leave their jobs.

Finally, the fact that the interviews were taken in English language in a Finnish-speaking environment means that some of the interviewees struggled with expressing their opinions to the full extent. While it did not seem to have a pronounced effect on the collected findings, it needs to be taken into account when assessing the data.

5.2 Suggestions for further research

This study captures attitudes and experiences of Finnish online journalists' and web editors' using web analytic tools and their perceptions of how that affects journalistic content and their relationship with the audience. Further research on a similar subject could expand the scope to other countries or test their reliability through quantitative analysis similar to the time-lagged analysis performed by Lee et al. (2012). Moreover, since this study together with most of the previous research looked into the subject from the journalists' point of view, it would be worth exploring how these issues are perceived from the audiences' point of view. Testing whether or not journalists' perceptions of audience preference are accurate and how readers perceive their own power over today's media could greatly enhance this field of study.

In addition, this study uncovered the fact that one of analytics' biggest impacts is on news headlines. Since this research does not explore the issue in further detail, there is space for doing further studies on how news headlines have changed over the last few years and what factors have affected that change. It could also be worth exploring whether the changes in news headlines differ among various types of news publications.

Finally, based on this study's findings it is hard to establish a causal link between the use of web analytics and tabloidization of news. Therefore, further research could look into the issue by either studying media content or building a quantitative regression analysis to assess causal relationship between using web analytics and publishing more populist stories.

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