MEASURING MEDIA CONTENT ACROSS SEVERAL PLATFORMS IN A HIGHLY DEVELOPED MEDIA MARKET

Geir Engen, Norwegian Media Businesses' Association (MBL)
Knut-Arne Futsæter, TNS Gallup

1.   INTRODUCTION

Since we started to measure websites as early as 1995 and mobile content from 2005, we have accumulated a lot of experience and findings to share. The Norwegian media market is somewhat unique since we have a strong newspaper industry that rapidly took part in the process of digitalizing media content. Norwegians have high access to and use of new media technology, so that we might argue that many countries could look to Norway for new media trends, as well as ways media companies should act to meet the digitalization challenges. We offer a short introduction to the Norwegian media landscape in chapter two.

The rapid development of content on several different platforms and consumption on different devices raise huge challenges for the research industry. The tender specifications for the Norwegian Internet measurement services 2014–2016 pinpoint these challenges (see chapter three). Chapter four describes the hybrid measurement system; in chapter five we will look closer at the specific challenges related to expanding the measurement to also include mobiles and tablets.

We have successfully been reporting the total media brand footprint of the media houses since 1996 by the multi-media survey Consumer & Media, using the recall method. However, the digital content and services in 2013 are spread on different platforms such as desktop, tablets and mobile, and the content is partly free and partly closed (paid). Chapter six will describe and discuss these situations posing even more complex challenges for research.

The paper will focus on the complexity of measuring newspaper content across several platforms; however the same methodological challenges are also relevant for other media channels.

1.1 The Norwegian media landscape

Media consumption in Norway is very high, especially for newspapers. With a population of 5 million people, the number of newspapers is impressive. We have 228 newspapers. Of these around 25 can be categorized as national or regional newspapers, the rest are local newspapers. Many of the local newspapers are hyper local (WAN-IFRA, 2013 and Høst, 2012).

For the last 20 years, Norway has held the world record in newspaper readership. In contrast to most other countries, almost all newspapers in Norway are commercially financed. Free newspapers have never been an important part of Norway's newspaper consumption (Høst, 2012).

During recent years, Norway's experience has been the same as that of many other markets. Falling print circulation and a decline in print advertising have made consolidation and synergy the most used words in the industry. There are now three big newspaper groups in Norway: Schibsted, Amedia and Polaris Media. These three groups own around 50 per cent of the newspapers in Norway.

The Norwegian newspapers began digitalizing their content very early, and for some time now they have referred to themselves as media houses rather than newspapers. The strategy for all the major players in Norway has been to use multiple platforms to deliver content to their users. Schibsted is a world leader in digital strategy and digital innovations.

1.2 New Media trends: Look to Norway

With daily use of the Internet at 85% and mobile content at 49%, Norway is a highly developed media marked. In 2Q 2013, 94 per cent of the population has access to the Internet, 79% have smart phones and 45 per cent have tablets. Facebook has a daily reach of 59 per cent. Figure x illustrates that Facebook is the second largest medium in Norway and the web edition of VG Web is the fourth largest. Among young people, Facebook is by far the largest medium and VG Web is definitely in second place.

Figure 1. *Daily reach for the largest medium in Norway*
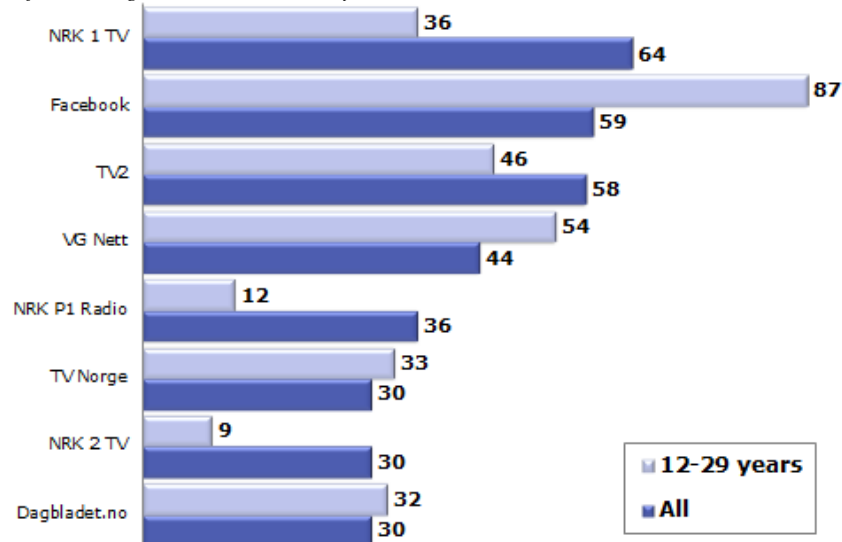
Norwegians still read newspapers and 66 per cent read at least one newspaper daily; however, readership of some national newspapers is rapidly declining, and more and more content is consumed on digital platforms (Futsæter, Sandvik and Østnes, 2013). The largest newspaper, VG, in 2Q 2012 had fewer readers of their paper edition than their mobile platform edition. Their paper edition readership was surpassed by their website in 2006 (see figure 2).

Norway is also a test bed for media measurement. We will discuss this in chapter 4, 5 and 6.

2.   THE NORWEGIAN MEDIA INDUSTRY

2.1 The media industry is changing

During the past decade, we have witnessed a dramatic change in the way media businesses around the world are organized, and how they regard themselves. Digitalization of everyday life and connection speed make delivery of digital content increasingly important, and Norwegian media are trying to adapt to this.

Almost all newspapers regard themselves as media houses, not just newspapers. The bigger players have launched a variety of services that are not directly linked to the production of hard core news, and the smaller ones have developed websites and mobile sites. With the development of faster access, both on web and mobile platforms, there is also a trend towards video coverage. Both dedicated web-TV services, like VGTV, and video integrated in articles are growing in scope and use.

As we will discuss later in this paper, there is a shift in the position that digital coverage holds in the media houses. A more sophisticated view of the mix between print and digital has led to a situation where deadlines are less important; publishing is done continuously.

We are also facing new competitors like Google and Facebook. The strong positions they have taken in most markets force media houses to rethink their strategies. We have moved, particularly in the field of advertising, from a situation where most media companies in Norway were monopolistic or had limited competition, to a situation where Facebook and Google are omnipresent and are found in every community. They are also introducing new business models which move us from OTS to PPC and PPA.

With the decline in print circulation and a more difficult advertising market, most media houses are assessing how best to charge their readers for digital content. They are preparing to move from free digital content to paid digital content. In some cases they are trying models where no digital content is free, others are trying to establish the ideal mix between free and paid digital content.

The main changes for the newspaper houses are:
* From newspapers to media houses
* From print to video
* From deadlines to continuous publishing
* From monopoly to competition
* From free digital content to paid digital content

2.2 The Norwegian media companies

There are three major companies in the Norwegian Newspaper industry: Schibsted, Amedia and Polaris. Schibsted owns the two largest newspapers in Norway. Schibsted also owns three of the four largest regional newspapers in Norway. And Schibsted owns Finn.no (classifieds) and several other digital services. Schibsted is considered one of the most innovative media companies in the world. They are now in a position where they generate almost 50 per cent of their revenue from digital services. Moreover, the digital services are more profitable than traditional operations. (http://schibsted.no/Pressesenter/Nyheter/2013/Resultat-1-kvartal-2013/)

Schibsted has developed several businesses using the same model: Successes in one market have been launched in other markets. For instance, Blocket.se and Finn.no have been models for leboncoin.fr in France. Schibsteds newspapers in Norway have gone in different directions based on the market situation for each newspaper. VG, the national tabloid, established their digital department as a separate company in 2000, whereas digital services have been an integrated part of the regional media house Bergens Tidende.

After A-Pressen bought Edda Media from Mecom they changed the name to Amedia. Amedia owns around 80 local newspapers and several websites not affiliated with newspapers. Most media houses owned by Amedia have a very strong position in their local market. Their approach to digital issues can be said to be protectionist. Local digital advertising has been limited in Norway; hence, local newspapers have tried to maximize print revenue, and have adopted a digital strategy accordingly.
All newspapers owned by Amedia have developed websites, e-paper and mobile sites. At the moment media houses owned by Amedia are experimenting with a variety of different models for paid-for digital content. Amedia will gain valuable insight into the models that work best in different markets.

Polaris Media is the third largest newspaper group in Norway. Polaris Media owns some 25 regional/local newspapers and several local newspapers. Polaris Media are in a situation similar to that of Amedia. Most of their operations are companies that have been totally dependent on the printed edition, and the main priority has been to maintain the paper's strong position. Nevertheless, Polaris Media's biggest title, Adresseavisen, has been one of the most exciting media houses in Norway when it comes to a multi-platform strategy. Polaris Media also has companies in their portfolio which have implemented new and brave digital strategies. iTromsø, which has the number two position in the largest city in the northern part of Norway, implemented a digital first strategy in 2010.

Egmont is also a very important player in Norway. They own TV2, the largest commercial TV group in Norway and Egmont HM, the largest magazine publishing company.

2.3   The story of the newspaper 'VERDENS GANG' (VG)

2.3.1   Readership of VG
VG used to be Norway's largest newspaper in print. Since 1995, VG has had an online presence as vg.no during the first years and later with other digital editions as well. In 1997 vg.no had 22 000 readers. At the same time the paper edition had 1 384 000 readers. In 2002, when the paper edition was at its highest (circulation), the paper edition of VG had 1 345 000 readers, while www.vg.no had grown to 402 000 daily readers. The overall reach of the VG brand (paper and web) was 1 543 000 readers in 2002. Now VG is the second largest newspaper in Norway. At the end of 2012 the paper edition of VG had 690 000 readers. At the same time the online edition www.vg.no had 1 849 000 readers. In addition, the mobile version of the newspaper, mobil.vg.no, had 775 000 daily readers. The VG brand (paper, web and mobile) had 2 275 000 daily readers in 2012.

2.3.2   From paper to digital – establishing a formula for success
VGs transformation from a newspaper to a digital media house, has been one of the most successful media developments in the world. VGs web edition has been making good money for several years. VG was not the first newspaper that moved into cyberspace, but since the launch of their website they have been the largest news website in Norway.

VGs success in the digital arena is closely connected with their ability to see Internet as an opportunity for new business. The management of VG, and the owner, Schibsted, recognized the Internet as an important platform in its own right. Due to this approach, the amount of content that came from the printed edition of VG has been very small compared to that of most other newspapers. Their approach has been to create and publish unique content during the day – that is, to publish news as it happens and not adapt news to the needs of their paper edition.

It can be argued that the decline in print circulation for VG is a consequence of their digital success. From VG and Schibsteds point of view, the paper edition would have experienced the same development even if VG had taken a more protectionist stance. As a national tabloid, their options were limited.

2.3.3   From paper vs digital to free vs paid for
Now VG has several different digital products in addition to the printed edition of the newspaper. They have their traditional website (www.vg.no) and their mobile site, but they also have different versions of the free news site suited for iPad and other tablets. They also have, of course, a digital, paid-for version of the newspaper available in PDF and e-paper.

In addition, they have introduced VG+, which is a stand-alone, paid-for product. The content of the VG+ edition usually cannot be found on any of VGs other platforms. Most of VG's digital products can be said to be available ATAWAD

(anytime, anywhere, any device). For instance, VG+ was introduced as a tablet edition, but recently they have developed a www version of the product.

VGs approach has shifted from making a distinction between print and digital to making a distinction between free and paid-for content. This is a fundamental shift in the company concept and has greatly impacted the workflow in the organization. It also has a huge impact on how they are positioning and promoting their different products in the market. The shift from paper/digital to free/paid has now been adapted by many media houses in Norway.

History repeating itself with mobile growth?

In Norway we see the beginning of stagnation in desktop internet for both use and advertising revenues. The obvious reason seems to be the explosive growth of mobile platforms. Both the amount of content being adapted to mobile platforms and the use of mobile devices are developing at high speed. We have seen users moving from print to web. With a much lower ARPU on web than on print, this has been a big challenge for most publishers. At the moment ARPU on mobile is significantly lower than on web.

VG has a strategy to deliver content to their users on a variety of platforms. Some of the content will be delivered for free, financed by advertising. Other services will have revenue from both users and advertisers.

VG will have to measure all of their products. They will need figures showing how many readers they have on each of their products, but they also will have figures showing combined reach between any of their products and the overall reach of the VG brand. Measuring mobile and tablet together with desktop will be of crucial importance for VG.

Figure 2. *Daily reach for VG*
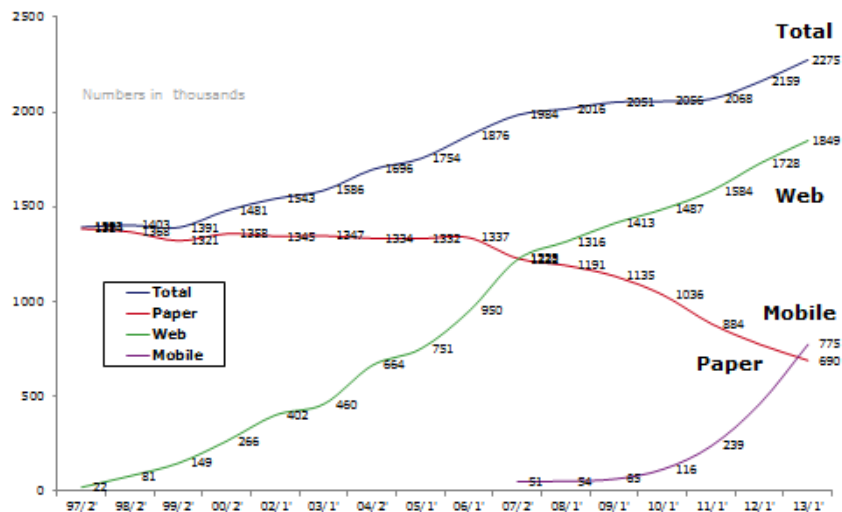
***Figure 3.*** *Page views on mobile*
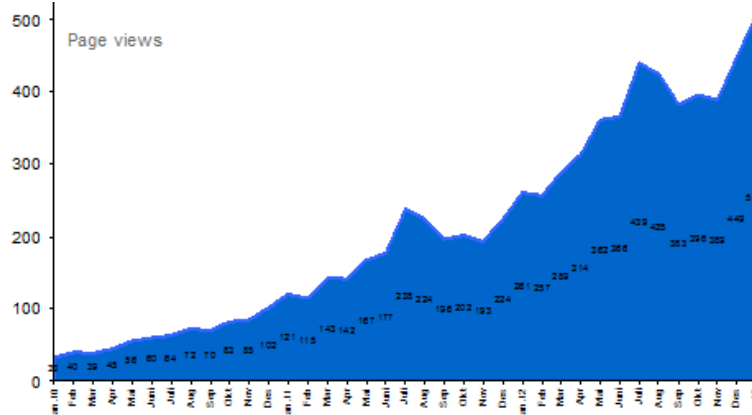
We also have figures for page OTS for web, mobile and printed that are crucial for analysing new business models. There have been presentations given by different media companies both in Norway and elsewhere that suggest that time spent on paid-for digital products is higher than on the web and mobile editions – but lower than on the printed edition. Increasing time spent on the digital products could be very important for generating revenues.

Figure 4.   *Average page views among users*
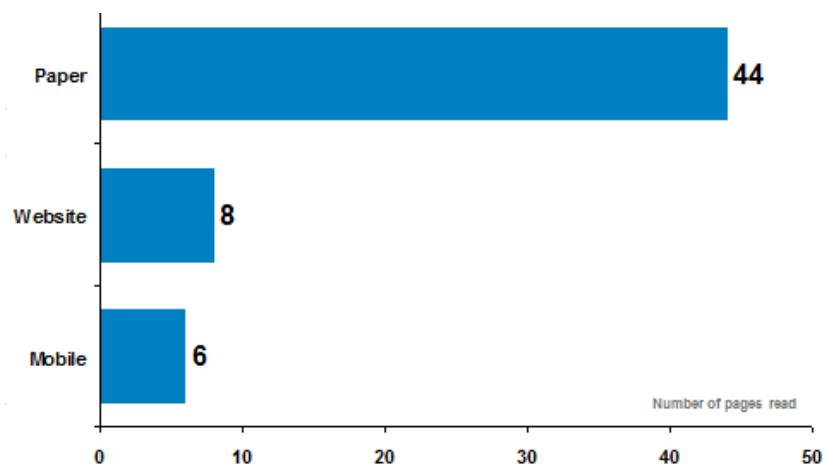
2.4 The story of the local newspaper Hallingdølen

Several other media houses in Norway are developing products in the same way as VG. They started out with a paper version and developed a website, though almost all other players have been much more afraid of cannibalization than VG has been. The online presence of many newspapers must be said to be of a more defensive character.

Hallingdølen is a local newspaper which had a circulation of 9 546 in 2012. Hallingdølen's management have been frequent speakers at international newspaper conferences during the past two years. The reason for this is the fact that they have implemented a strategy where (almost) all their content is paid-for content. In their own words; their readers are paying for the content, not the distribution. They have a phrase for this extensive bundling: All inclusive.

Figure 5. Paper and digital content from Hallingdølen
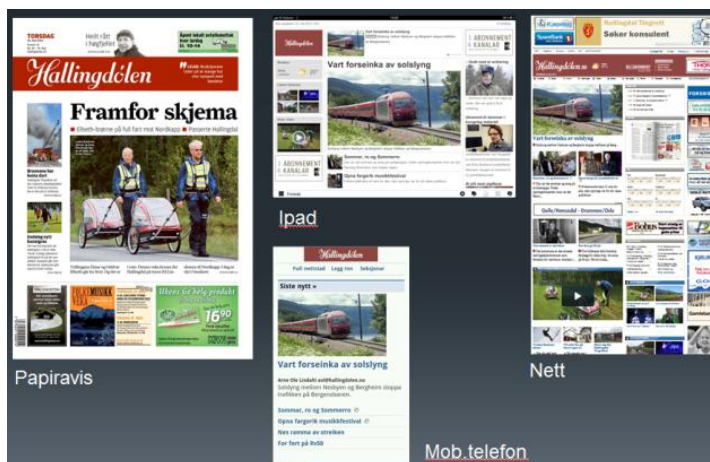
Today they publish the paper edition, a website, and a mobile website, a version for tablet, a plain PDF version and a more sophisticated e-paper version. Hallingdølen was one of the first newspapers to use Saxotech's newest publishing platform. This platform enables the newspaper to publish the same content on different platforms in a very efficient way. For a small newspaper, this is important.

The main trend in Norway for local and regional newspapers is that they are closing their websites to non-subscribers. Some may be closing entirely, like Sandefjords Blad, or partly, as Fædrelandsvennen has done. At the moment there are more than 20 newspapers working with different solutions where they have closed their website to non-paying visitors. In addition to this, almost all Norwegian newspapers have a PDF and an e-paper version of the newspaper. These versions are identical to the printed edition.

After Hallingdølen closed their website to non-paying visitors, they experienced a drop in page impressions. However, the time readers spent on their website increased significantly. Combined with greater focus on the sale of online advertising, the newspaper claims that ad revenue on their website has gone up since they launched their new strategy.

3   THE NORWEGIAN INTERNET MEASUREMENT SERVICE 2014– 2016

MBL represents websites ranging from local newspaper sites to the largest media sites, and the system is designed to measure Internet use in Norway for the participating websites. MBL and its members have a long history going back to 1996 as clients of the TNS Kantar Internet Measurement service in different forms and using different technologies. MBL's members have more than 150 of the largest websites in Norway. Advertising on MBL members' websites amounts to more than 70 per cent of the total revenue for Norwegian online display advertising.

At the start of the tender process for the period 2014-2016, the clients had a clear view of what the internet measurement service should comprise. The service should:

- Measure all forms of Internet use – both 'traditional' Internet, mobile Internet, streaming, use of apps and any new forms of Internet use that can be considered to be Internet use.
- All platforms should be measured: PCs, phones, tablets and others that are commonly in use during the contract period.
- Have a site centric part and a high-quality, recruited panel.
- Fulfil the needs of member sites with 1 000 000 to 100 unique visitors on an average day.
- Have a software solution that eliminates the need for any other analysis tool that the clients have to buy today in order to manage everyday analysis.
- The Web Analytics will measure Internet use in Norway – including demographical data – both in and outside the home – for editorial and commercial use, primarily by advertisers, media agencies and the media itself.
- Data to be reported:
  - Public traffic ranking lists
  - Technical measurement of traffic
  - Panel data with reach figures calculated as number of people, with free selection of demographics
  - Detailed description of online video streaming

To sum up, the main criteria for the tender are:
1. To deliver an Internet measurement system for all types of sites
2. To recruit a randomly selected, high quality panel that is credible and comparable with other media panels
3. To measure all content on any platform and for any device
4. To deliver a modern tool for site centric measurement and reporting

4   THE NORWEGIAN HYBRID MEASUREMENT SYSTEM

Media consumption and the media industry are changing faster than ever before, and the measurements have to adapt. This is illustrated by the challenge of measuring all content generated by the traditional newspaper industry which has now turned into media houses. In addition, different media have different needs for analyses. Small local newspapers such as Hallingdølen have other needs than those of large national media houses such as VG. However, both have to be part of the same national and local currency for measurements.

Back in 1995 when we started to measure Internet sites in Norway it was straightforward to measure local and national newspapers by CATI. The main reason was that almost all of the measured media were websites from the traditional newspapers and TV stations. They had the same media titles as the paper editions and they all had very strong brands in their local and national markets. In 1998, the CATI measurement was combined with browser measurements.

When use of mobile content began to increase less than ten years ago, we had to begin measuring the largest mobile services. We have measured mobile content since 2005, first by CATI and later from site centric and user centric data from peoples' mobile telephones. We have been measuring traditional newspaper content, websites and mobile content since 2005 by CATI in the multimedia survey Consumer & Media. However, this has proved to be imprecise. It is necessary to measure peoples' media usage by a passive metering system and to monitor peoples' behaviour on all devices. The most important task is to develop a new system for integration of the use of mobile content and tablets in the official Norwegian Internet Panel. We will describe this in more detail in chapter five.

The first criterion in the tender was that the media industry wants a combination of site centric and panel measurement that can provide good data for the whole range of participating websites. To meet this challenge, we have developed a hybrid measurement system that will be described in the next section.

The second criterion in the tender is that the clients want a high quality panel that is comparable with other media. To meet this demand for the large websites, we use a randomly selected and recruited, high quality panel of at least 5 000 respondents to deliver daily overnight data to the clients. This panel is based on an initial Establishment Survey and on Annual Surveys. The systems measure figures that are credible and comparable with other media. This means that we measure the activity of real people, integrated with the standard technical measurements. The Norwegian Internet Panel (NIP) will be described in section 4.2.

The third criterion is that all forms of Internet use should be measured – Internet on PCs, mobile phones, tablets and any other devices in use in the population. All content, whether it is websites, Internet streaming, use of apps or any new forms usage that clients consider as 'Internet use'. The way we solve this crucial issue will be discussed in chapter five.

4.1 The three measurements

In 2010 TNS Gallup established a hybrid methodology system consisting of three measurements which are used for different purposes:
- The site centric browser measurement TNS Scores gives detailed figures of all traffic on the measured sites.
- The Norwegian InternetPanel measures usage at work and at home for all websites that use Scores.
- The multi-media survey, C&M, - gives cross-platform, multi-media and target group analyses.

Figure 6. *The three digital measurement from 2010-2013*
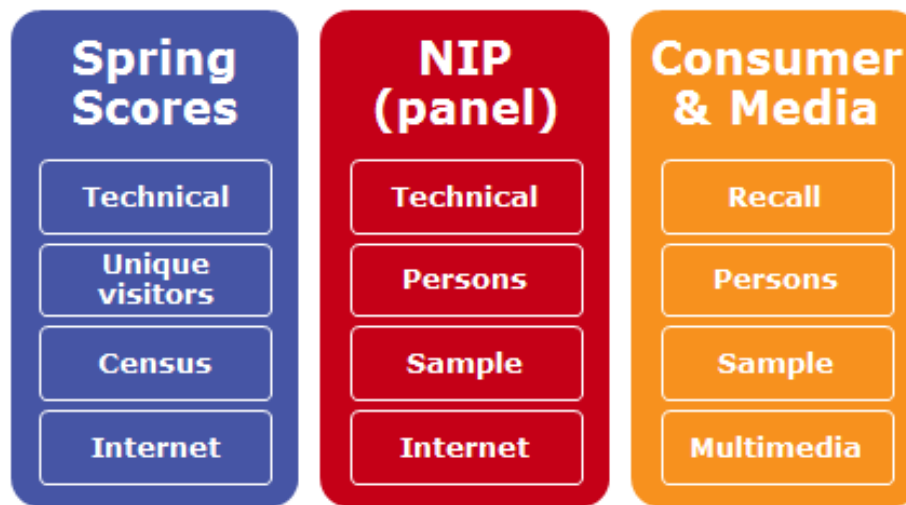
We use different measurements depending on the purpose for our analyses. NIP is the currency for national sites and can give reasonable figures for the largest regional markets (weighted) and demographic groups.

C&M is the official currency for local newspapers, it provides opportunities for specific target group analyses and multi-media analyses. Scores gives detailed traffic data on a browser level for sites and categories.

Figure 7. *Different measurement for different purposes*

	Scores	NIP	C&M
The national market		X	
The regional market		X	X
The local market			X
Target group analyses		X	X
Multi-media analyses			X
Traffic on small sites & categories	X		

4.2 Connecting the different measurements

The official Internet figures from the Norwegian market come from the Norwegian Internet Panel (NIP). However, since NIP in 2013 does not yet take into account the use of mobile devices and tablets, the figures from NIP are too low. For the time being, we use a combination of the three measurement systems to report reasonable and trustworthy figures. In 2013 mobile content is reported outside NIP.

The magazine's websites are also measured in the system. Many of these sites have different names from the paper editions and they are often highly niched market sites. However, the magazine industry also wants to have cross-platform analyses and total brand measurement in conformity with the newspaper industry analyses since 1995. The figures from the net magazine services were calibrated from Scores and NIP into Consumer & Media for the first time in February. We are currently discussing the possibility of calibrating the newspapers' web titles from Scores and NIP into Consumer & Media. There is a global trend that a growing number of surveys are carrying out fusions and calibrations with other media, particularly concerning audience estimates for websites (Page, 2011). These issues will be discussed in the last chapter.

4.3 The internet panel: NIP

It should go without saying that the measurements have to follow the users. There is no 1:1 relationship between cookies and people. One person can represent several cookies and several people can share the same cookie. In order to get real audience data counting people with demographics and reporting reach, we need to move beyond the site centric measurements counting cookies. The most obvious way to solve this is by building a gold standard panel based on the same principles as the audience currency panels built for TV and radio.

The Norwegian InternetPanel (NIP) is established on the same methodological principles as those used in the traditional Peoplemeter panels for TV and PPM panels for radio. There are two basic principles: first we recruit a panel representative from the population we want to measure, and second, we collect complete and correct data of the media usage from each of the panel members – in this case, their Internet usage. Both of these principles are of equal importance in order to provide reliable estimates of the audiences.

NIP is representing the Norwegian Internet universe, defined as persons aged 12+ who have access to and have used the Internet from home and/or work/school during the last 30 days. The recruitment and balancing of the panel is operated with the usage of panel controls derived from Establishment Survey analyses in the same manner as we do for TV and radio. The multimedia survey Consumer & Media serves as the data source for the panel control analyses as well as the recruitment basis for the panel. The panel is recruited according to a matrix combining gender, age group and place of access to Internet (at home or at work/school). These have proven to be the most important factors for variations in Internet usage. In addition the panel is weighted on a daily basis by education, region, newspaper regions and usage of mobile Internet. This ensures that the panel reports representative audience data for the Norwegian Internet population and that we can deliver validated overnight audience data on a daily basis.

In the recruitment interview we ask the panel members to list all the devices they use for Internet. We then send an email or SMS to each of the panellists' devices/browsers, including a link to set a cookie. This gives us a connection between the browser/device and the panellist ID and we can then track and extract the panel member's visits on the tagged sites in the site centric traffic measurement (Scores). The method in use requires no software installation or admin rights, so we have a very good representation of work devices. In the case of multiuser devices we ask the panel member to set a panellist start page in their browser where the user of the device can identify whether he/she is or is not a member of the panel. By a simple click on yes or no, the user is redirected to the original start page for the browser. This start page enables us to filter the traffic from the browser so we only include the usage from our panel member. With the combination of a complete measurement of all devices from each panel member and this start page for filtering traffic from other users, we are able to report representative audience figures for persons instead of cookies. This is a huge step for the Internet industry, giving precise demographic target group information comparable to the information other media have had for decades.

The second basic principle for the high quality panel is to make sure we get a complete and correct picture of the Internet usage from each panel member. First of all this is ensured in the recruitment phase where the panel members have to activate all their devices before they are included in the reporting panel. Furthermore, each panel member has to pass a validation check on a daily basis. We have established a production system with daily validation of whether the panel member's devices are still active in the measurement. Validation starts at the browser level where we check that the cookie is seen in the traffic measurement during the previous 28 days. This is our criterion for determining whether the cookie is still alive and has not been deleted. We measure several browsers on each device, and the device is validated based on the main browser. Finally the panel member is validated based on the share of Internet usage being covered by the valid devices. If the share of the measured browsers/devices falls below our agreed limit, the panel member is rejected from the reported sample on the day in question. We have developed a sophisticated panel management system for automatic dispatching of reminders to browsers/devices that have not been seen in traffic data over a certain period of time. We are also putting effort into ensuring that panel support is in contact with panel members who have fallen out of the measurement. Our experience from operating TAM panels has been adapted to the management of the Internet panel.

***Figure 8.*** *Daily validation at three levels*
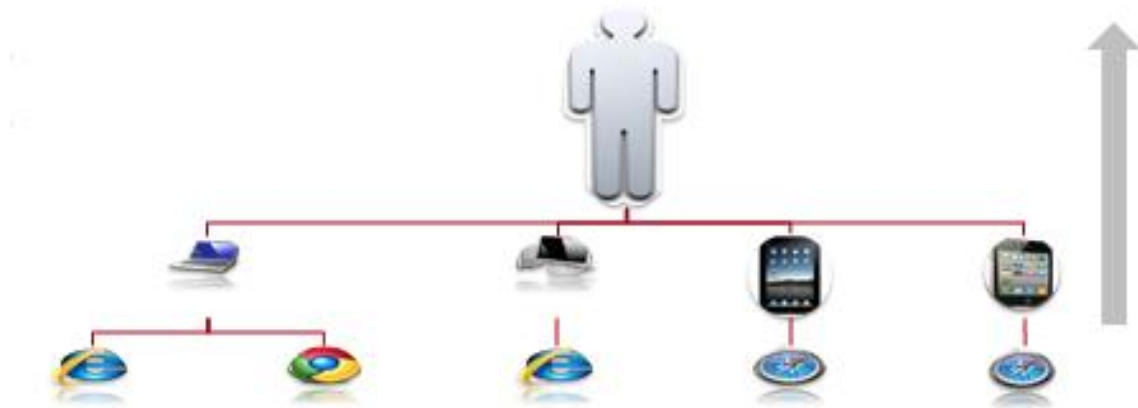
5   EXPANDING THE MEASUREMENT TO NEW DEVICES: MOBILES AND TABLETS

5.1   The measurement challenge

The expansion of smart phones and tablets raises some huge challenges that we have to solve. Since 2011, the access to smart mobile phones has grown from 46% to 79%, and tablets have grown from 7% till 41%. This dramatic growth in new devices represents challenges when it comes to running a representative panel.

Figure 9. *The expansion of smart phones and tablets*
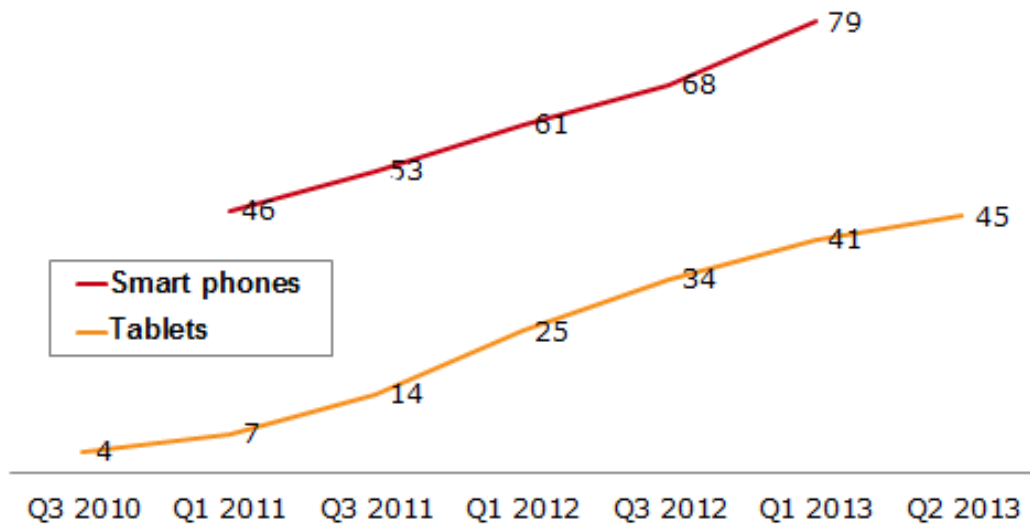
Furthermore, this chart illustrates the dramatic growth in traffic from mobile and tablets from 2011 to April 2013. Ten per cent of the traffic comes from Android devices and 26 per cent from iOS in 2013. This means that 36 per cent of all Internet usage comes from tablets and mobile devices. Compare this to only 7 per cent in 2011.

Figure 10.   *Total sessions from Scores: More than 36% of the traffic comes from mobiles and tablets*
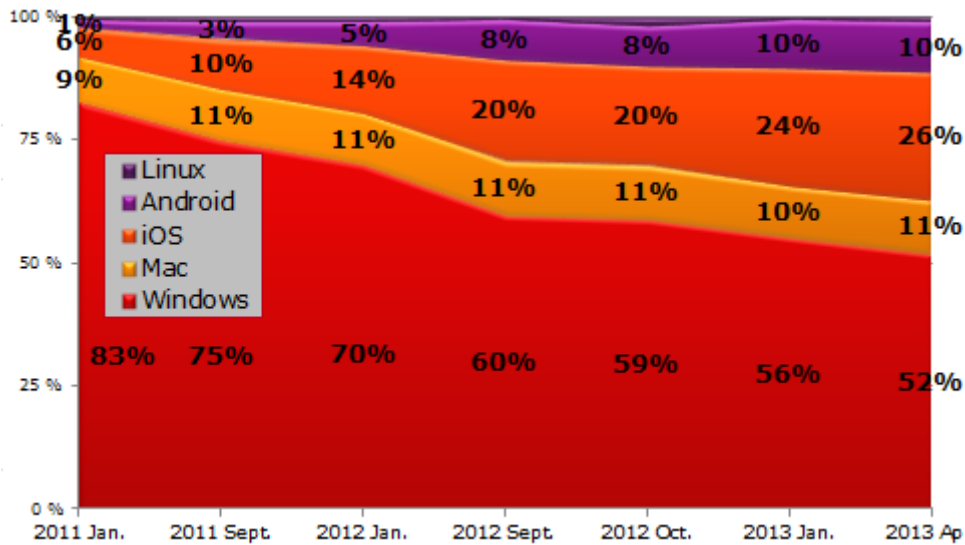
5.2 Measuring and reporting mobile content

To prepare for the new Internet measurement starting officially with the new contract in 2014, TNS Gallup is expanding the current measurement to include Internet usage on mobiles and tablets, both on browsers and Apps. It is crucial to include these devices and platforms in order to continue to provide representative audience estimates for the market. Our approach is stepwise with the ambition to gradually include more aspects in the measurement as soon as practically possible for each of the solutions, but with all elements in place from start of 2014. This gradual approach made it natural to start with the mobile phones.

Measurement of mobile phones was already a part of the panel as established in 2010 – although it was not mandatory for the panel members. As Internet use from mobile phones grew significantly in the following years, we had a very good starting point for building a full coverage mobile measurement into the service. In early 2012 we therefore started campaigns in the panel to measure more of the mobile phones we already knew the panel members were using. We also asked our panel members again whether they were using a mobile phone for Internet and we paid incentives for all members activating their phone in the measurement. During six months we managed to increase the share of active mobile phones in the panel from 15 to 35 percent. So the most important initiative needed to include mobile phones in the measurement was basic and targeted panel management activity.

Then we also faced the challenging task of trying to run a representative panel by following every single device the panel members use. One thing is the number of computers and laptops at home and at work already in the measurement, but when we are expanding the scope to include mobiles and tablets, the task for the panel member is even harder to achieve. Not only does the average number of devices each panel member has to activate in the measurement increase, but the lifetime of these new devices becomes shorter as people buy new phones more often than before. So we had to accept that 100 per cent coverage of all devices used by each panel member was difficult to achieve, and we started looking for solutions to correct this.

With support from Kantar Media's central research team, we developed a fusion model making use of data from the complete and valid panel members in order to ascribe data to panel members that have a claimed mobile phone missing in the measurement. The model searches for twins between these valid panel members being donors and panel members with a missing mobile phone being recipients. The donors can potentially have zero mobile traffic on a given day. The fusion model is penalty-based giving matching penalties for differences in a number of characteristics – demographic, device related and based on Internet usage on a number of content categories across the previous month. The model will choose the donor with the lowest penalty. The availability of data on Internet usage from the measured and valid devices both for donors and recipients provides a good potential for a precise fusion process. The fusion runs on a daily basis, and in order to avoid artificial high reach levels, additional penalties are given to increase probabilities of matching to the same donor as the day before. As the fusion process ensures that all the claimed mobiles in the panel are valid, the panel can also be weighted according to the share of claimed mobile usage in the universe. This solution ensures valid and correct representation of the mobile usage in the reported audience data. It is also important that the fusion enables us to report mobile audiences, or any other new device entering the market, much faster than a full single source measurement would require.

To be able to report valid mobile audiences from the panel we have to build a full coverage of the claimed mobile Internet usage from our panel members. 67 per cent of our panel members claim to be using their mobile for Internet, but so far we measure only 41 per cent mobiles. We are working to tag and measure more of the claimed mobiles, but we have also introduced a fusion model where we fuse data from the valid mobile phones to the missing, invalid mobile phones. The

fusion ensures that all panel members with claimed mobile Internet usage are covered, and we can then adjust the claimed share in the panel to the universe estimates which is 68%. This solution gives us valid and weighted audience estimates including mobile usage.

Figure 11.   Data fusion to non-measured mobiles and weighting of mobile usage
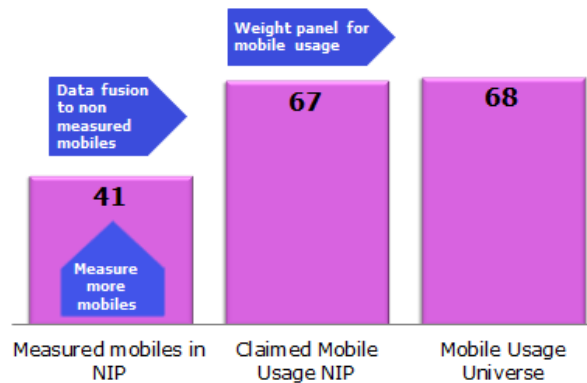
With a growing number of measured mobiles and a positive donor/recipient ratio, we are satisfied with the fusion diagnostics and the overall performance of the model. Another strength is that the reported levels of average daily and weekly reach on the mobile sites are very similar between the donors and the recipients (average daily reach, week 26):

Figure 12.   Daily reach for mobile services in the fusion groups
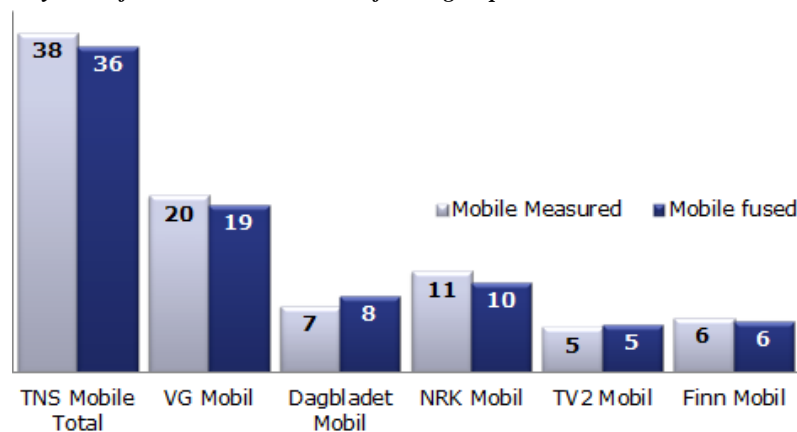
The fused results from the panel are also compared with other data sources in order to evaluate their validity. Although the data sources are based on different methodology and by default would expect to show some differences, the variations should be explainable both overall and across the measured sites. We have the opportunity to compare our fused panel data both with reach levels from our multimedia CATI survey (C&M) based on recall and with the traffic measurement TNS Mobile counting unique visitors. NIP reporting persons, is expected to report lower audiences than the traffic measurement counting browsers. Some people have several mobile phones and at the moment the traffic from the browsers and apps is counted as comprising two separate users in the traffic measurement. 2013 will include a shift in the traffic measurement for the mobile portals from MobileTech to Spring. Currently only the traffic on the mobile portals is counted, with the shift to Spring, all usage on mobile portals and ordinary web sites from a mobile phone will be counted. Although there is still some development pending, we already see that the reported levels are very close for many of the sites.

The graph below shows the average daily reach for the two largest newspapers' mobile portals VG and Dagbladet for week 26. Before fusion, the panel reports an audience of 319 000 for VG; after fusion it increases to 474 000, which is very close to 507 000 in the census data from TNS mobile after the APPS usage has been removed. The panel audience for Dagbladet is 189 000 after fusion, compared to 240 000 in the census data excluding APPS usage.

It should be said that the example in figure 13 shows unofficial results from week 26, and we have not yet finalized the measurement solution. However the analyses we have seen so far are very promising. This is a project in continuous development, and when the APP measurement is rolled out in the panel and the traffic measurement has shifted to Spring by the end of 2013, we have strong reasons to believe that the reported mobile audiences from the panel will be highly reliable.

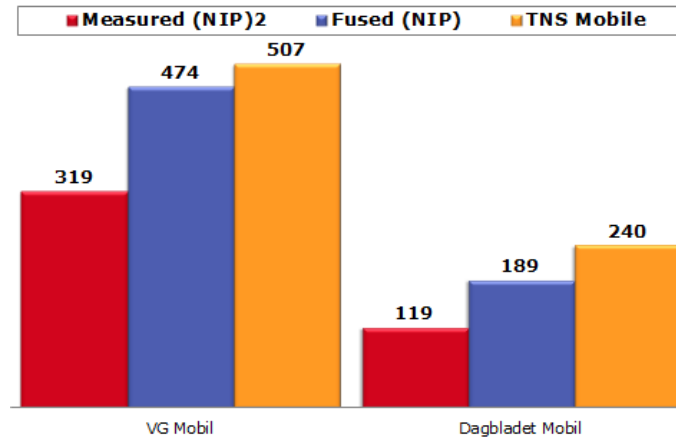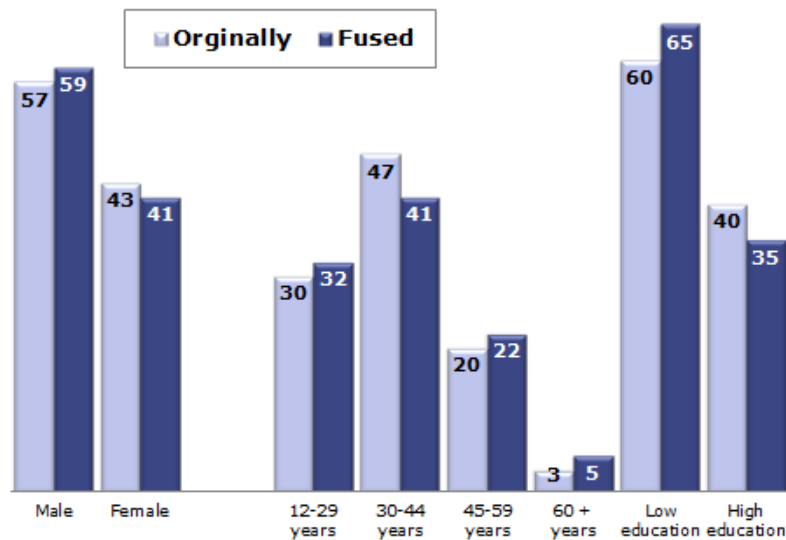**Daily reach for measured (NIP), fused (NIP) and TNS Mobile**

Figure 13. *Demographic profiles from originally and fused daily reach for VG*

5.3 Apps measurement

As an important part of the expanded scope of the measurement, we are also preparing to include Internet usage from APPs as a part of the measurement. Until now we have only been measuring Internet usage via browsers; however, we have seen that the traffic via APPs has grown significantly over the last few years. So the APP usage has now become a self-evident part of a high quality Internet audience measurement system.

The APP measurement will be rolled out to the panel in the autumn 2013, enabling measurement of APPs from the Norwegian media. The process starts with tagging of the APPs on the measured sites; both native and hybrid APPs are possible. Then we will install a "Panel APP" on the panel member's mobile phones and tablets. This connects the device to the panellist ID so we can extract our panellist's APP usage from the traffic data. The installation process will be synchronised with the current installation procedures so both the APPs and the browser measurement will be activated at the same time. The process has proven to be simple and self-explanatory to the panel member. The APP even has functionality for logging into the panel member web portal for maintaining devices and background data, allowing the panellist quick access to panel support. The APP measurement allows NIP to report actual demographics and reach on specific apps as well as content, and even report online streaming viewed through APPs in the panel.

5.4 Measuring and Reporting tablets

The last but not least important development of our Internet measurement system this year is the inclusion of tablets in the panel. The traffic from tablets via browsers is already included in the site centric measurement. With the tagging of the media APPs we will also get these data in the site centric measurement. The new measurement allows content to be measured from both browser and APP (hybrid apps), and at the same time measures usage on the APPs separately. To get the full picture of the Internet audiences, we also have to include the tablet measurement in the panel.

When we first established the panel in 2010, tablets were not an issue. The focus was on desktops and laptops with mobile phones as a loose add-on. As we have seen, the prevalence of tablets has grown and this is also the case in the panel. In order to report complete data from our panel members, we have to make sure we also measure their tablets.

Although there were already a number of tablets activated in the panel, the systematic roll-out of tablet measurement started in spring 2013. An update questionnaire was sent to all panel members, asking, among other things, whether they were using a tablet. By the end of June, the share of tablets in the panel had increased to 10 per cent, up from 1 per cent in January. This means we still have a way to go. During autumn 2013, we will continue the process of activating more tablets in the panel, a process which will be combined with the roll-out of APPs measurement. We will also include the tablets in the fusion process already developed for mobile phones. This will ensure a complete measurement of all claimed devices, and we can additionally weight the panel by tablet penetration to get representative audience estimates including tablet usage.

The current fusion process for ascribing data to non-active mobile phones in the panel will be adjusted to also include non-active tablets. There will be only one fusion process running, searching for the best potential matches both for mobiles and tablets at the same time. Potentially, a mobile donor can be a tablet recipient and vice versa. This makes the best use of the active devices and ensures better maintenance of the data variation in the panel. Including tablets in the fusion will also necessitate some new matching criteria. While mobile phones are considered by default to be single user devices, tablets can be shared by several people. This requires special validation rules for tablets, but it also means that the panel member's share of the device usage will be an important matching criterion in the fusion process.

The multi-user tablets give rise to special challenges in terms of validation. For computers we have the start page allowing us to filter out usage by persons other than our panel member. For tablets, however, this start page solution is not possible and we have no technical solution for filtering out traffic from other users than our panel member. This is due to the fact that browsers on tablets (especially iPads) do not have the same ability to set start-pages as normal PC/MAC browsers. Hence we cannot ask the user at the start of his surfing session to identify himself and thereby determine who is using the browser. This means we run the risk of over-reporting audience figures using other methods. Our methodological approach is to ask the panel member about their share of usage on the tablet. If our panel member's share of the usage on the tablet is below 50 per cent, the tablet will not be measured. If our panel member's share is 50 per cent or higher, all usage data from the tablet will be included in the audience estimates. This means the reported usage on the measured tablets will compensate for the lost usage on the non-measured tablets. Although the demographic profiles will be less precise and the reach levels will not be accurately compensated, we get good estimates of the usage volumes. As the prevalence of tablets increases even more, we will also expect more tablets to be single user devices, and this challenge of multi user tablets will decrease.

6 THE ROAD AHEAD

6.1 Summary

The Norwegian media market is unique since we have a strong newspaper industry that very quickly took part in the digitalization of media content - which causes the research industry to face huge challenges. The same methodological challenges also exist for other media channels and in other countries.

We have been successfully reporting the total media brand footprint of the media houses since 1996 by multi-media survey Consumer & Media by the recall method. We have later introduced browser measurements, mobile measurements and a high quality panel. However, the rapid development of content spread on several platforms and delivery on different devices raises major challenges for the research industry. So far we have actively met the challenge of measuring mobiles and tablets.

To sum up we have a:
- Transparent hybrid measurement system
- High quality measurement such as TAM
- The system follows real people users across all platforms
- Credible and comparable measurements with other media
- Future proof: Measure all content on all devices
- Modern reporting system with overnight delivery, Scores 2.0 and CPCD (Infosys+)

6.2 Future perspectives

Media content is spread on more and more platforms and formats and it is consumed on new and different devices. The research industry has to catch up with this huge and continuously and rapidly changing environment. This paper illustrates the complexity of measuring newspaper content spread on several platforms.

Additionally, the digital content is becoming more and more complex. Some content is only distributed on traditional websites, some also distributed on tablets and mobile in the exactly same formats. Other media have completely different content and services on different technical platforms. Some content is free for everyone to use, some partly and some are completely behind pay walls. For example VG at the moment has the following content delivery: Paper (paid), digital (free on web, tablet and mobile), VG+ (digital paid) and VGTV (streaming). Smaller local newspapers such as Hallingdølen have less diversity, with only paid paper and paid digital.

In the mid- nineties, it was methodologically acceptable to ask people to recall if they had read the paper or web edition. Similarly, it was possible to measure VG's Mobile edition seven years ago. However, it is close to impossible to measure by recall all sorts of different content on different platforms in 2013. We are currently (4Q 2013) testing different ways to measure digital content by CATI, and the preliminary conclusion is that it is impossible to ask people about all sorts of digital content in 2013. Most likely, we will have to use more and more data integration techniques to fuse and calibrate electronically measured content into survey data. Recall methodologies have their limitations when it comes to measuring websites and digital platforms (Page, 2011).

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