



egta insight

ADVANCES IN HYBRID TV AUDIENCE MEASUREMENT

2020 edition

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TABLE OF CONTENTS

| | |
|-----------|--|
| 5 | Introduction |
| 9 | Executive summary |
| 11 | Part 01: The evolution of television audience measurement: Past, present and future |
| 23 | Part 02: Advances in hybrid television audience measurement – Market examples |
| 24 | Canada |
| 26 | Denmark |
| 28 | Finland |
| 30 | France |
| 34 | Germany |
| 38 | India |
| 42 | Ireland |
| 44 | Italy |
| 48 | Japan |
| 50 | Norway |
| 52 | Sweden |
| 56 | United Kingdom |
| 60 | United States |
| 69 | Part 03: An overview of the video audience measurement services provided by leading research and measurement companies |
| 70 | Comscore |
| 72 | Gfk |
| 76 | Gemius |
| 80 | Ipsos |
| 84 | Kantar |
| 88 | Nielsen |
| 93 | Part 04: International audience measurement initiatives and collaboration |
| 94 | The WFA cross-media measurement Initiative: Advertisers take the lead |
| 95 | CFlight – A TV approach to holistic video measurement |
| 96 | Global Alliance for the Measurement of Media Audiences (GAMMA) |
| 96 | The audience measurement activities of egta |
| 97 | The TV Charter: TV companies' commitment towards the responsible and transparent measurement of advertising in the Total Video ecosystem |

LEGAL NOTICE

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INTRODUCTION

It is well established today that viewers watch television content on many screens other than TV sets and usually via the internet, using a variety of connected devices. Viewing behaviours have evolved faster than the audience measurement techniques that form the basis of advertising transactions, and the whole industry, egta's television sales house members included, agrees that audience measurement systems must be fully adapted to the current reality. Viewing behaviours observed during the Covid-19 epidemic have only accelerated this trend and accentuated the need for more robust and unified measurement of viewing across devices.

The television sales houses represented by egta base their arguments for evolved video audience measurement on the following premise: television is – and will remain – the leading mass communication medium, while also proving effective for smaller target groups through niche and thematic channels, whether delivered via over-the-air broadcast, cable, satellite, Internet Protocol Television (IPTV) or over-the-top services. Television is not only the most trusted and brand safe medium, it is the medium that enjoys the most effective, quantitative and robust measurement, and the use of electronic people meters is almost universal.

To underline the quality of TV measurement, egta and the Global TV Group published a [TV Charter](#) in 2019, which lays out standards for the entire TV industry and highlights its commitment to responsible and transparent measurement of advertising. Television offers the most accurate and audited data, and it allows for meaningful comparison between countries. Effective evolution therefore requires the extension of traditional and hybrid television audience measurement (TAM) systems to all other devices, rather than its replacement by an entirely new system.

Several countries – many of which can be found in Part 2 of this report – have been working for years already on the development of new measurement solutions that can capture viewing beyond the traditional television screen and delivery methods. These projects, which typically involve a hybrid methodology using two or more types or sources of data, are at different stages of readiness: in some cases, the first results are being reported to the market, others are at the deployment and testing phase. Beyond the technical challenges associated with measuring increasingly fragmented device usage, some of the most important unanswered questions lie in the commercial decisions that will ultimately be taken around how to use audience data for monetisation: the question of tomorrow's currencies.

Over the years, egta has taken part in various measurement activities, with the aim to foster dialogue and promote robust and future-looking audience measurement solutions for the television industry and beyond. One initiative which has been given much attention since 2019, is the ongoing cross-media measurement initiative by the World Federation of Advertisers (WFA) through which marketers decided to *take matters in their own hands* and call for a global framework which offers deduplicated cross-media reach and frequency and the ability to measure viewers of advertising across screens, platforms and channels with a single measurement. What this ongoing project has underlined is that there is still some way to go in terms of designing a measurement system that satisfies advertisers' needs, but just as importantly, there is momentum like never before among all parts of the industry to collaborate and advance the development of audience measurement systems across media. It is the aim of this publication to highlight and remind the industry of the advanced and high-quality work already achieved in television audience measurement.

ALWAYS
PROVE
FORWARD

FOREWORD

Changing viewing habits have propelled our industry into a Total Video era, which is good news for advertisers as well as broadcasters. Our clients can follow their targets everywhere and whenever they watch our content, and it is now very common for over 20% of the overall audience of a program to be made up of views that are neither linear nor coming from the TV set. During the COVID crisis, TV has shown, more than ever, how central it is in this new Total Video field.

But the industry is late. We, as egta, strongly support initiatives such as those launched by the WFA and the MRC which aim to set comparable measurement for TV and online video opportunity to see. Advertisers urgently need to be able to plan, buy, follow and report their video campaigns, which today very often include linear TV, Catch up and online video. Let us not forget that brand safety, transparency, third party measurement and duration weighting are essential if we are to come up with a solution that properly addresses the needs expressed by the WFA. We fully support these fundamental features, and are confident in the strength of TV assets, when all media are compared on a fair basis. That is why we are so excited to enter this Total Video era!



--- **Laurent Bliaut**, President, **egta** and
Deputy General Director, Marketing and R&D, **TF1 Publicité**



EXECUTIVE SUMMARY

Part I examines the evolution of television audience measurement; from its beginnings and the journey it has been through as it adapts to today's changing viewing patterns and technologies. In particular, it explains how TAM has extended beyond linear broadcast viewing and the approaches taken to measure viewing on multiple screens. It also gives an assessment of the challenges that still lie ahead as markets are working on or perfecting hybrid measurement solutions.

Part II provides overviews of audience measurement projects and developments in a variety of markets – most of which have experience in using hybrid measurement methods to measure viewing across screens and platforms. One observation that stands out from those examples is how approaches vary from market to market. The overall intentions may be the same, but the details of objectives and methodologies often differ. That can be good in that this could help identify the pros and cons of alternatives, especially of assistance to those coming later to hybrid development.

Part III gives a summary of the hybrid or total TV measurement services offered by some of the world's leading market research and measurement companies. The reason for including these in this publication, apart from their advanced services, expertise and innovations in measuring audiences, is that they often work as trusted partners with joint industry committees (JICs) and frequently constitute parts of the equation in national TAM systems.

Part IV outlines recent examples of industry collaborations and initiatives which aim to raise the bar in cross-media/total video audience measurement.

The content of this report was gathered and updated throughout the spring and summer of 2020. It is not intended as an exhaustive analysis of TAM methodologies, and it should be noted that this is an area in constant evolution.



PART 01:
THE EVOLUTION OF
TELEVISION
AUDIENCE
MEASUREMENT:
PAST, PRESENT AND
FUTURE

By **Ivor Millman**,
Special advisor to egta on television audience measurement

The origins of TV audience measurement and its importance for advertising

To understand the journey that television audience measurement (TAM) is on as well as its complexity, it can help to see how and why it has evolved over the past decades. Before Big Data, a business would usually know how it was performing from its own internal measurements. For example, a manufacturer would know what the factory had produced and thus what raw materials needed to be replaced. The shopkeeper knew what he had sold and thus what needed to be restocked. And so on. In the world of television, however, the channel knew what it had broadcast, but it had no information about how many and who had viewed the programmes and commercials. Whilst audience measurement data was important for all television channels, it became essential for those whose finances depended on selling advertising. The advertiser would need to know how many people had seen their advertising.

By the time that commercial television came to Europe, a model to deal with this problem had already been developed in the United States, and since many advertisers operated on both sides of the Atlantic, this model was also introduced throughout Europe.

In its basic form, the audience measurement model depended on market research methodology and statistical theory and practice. There would be a sample of homes representative of television households whose viewing would be measured. The resulting data would then be grossed up to the universe to generate viewing figures. With few exceptions, the shape of this model was widely accepted. Households in the sample, on the viewing panel, would have a meter attached to their television set which could identify when the television set was switched on, for how long and which channel it was tuned to. Alongside this would be a survey, characteristically a written diary, in which household members on the panel were asked to record their personal viewing behaviour.

This model was developed in the 1950's, and at its

core, it is still the one used now going into the 2020's. It has worked well. Traders in the airtime market have been able to trade and television airtime markets have flourished.

The evolution of TAM

Over the years, great effort and expense has gone into making TAM systems as good as possible. They, as well as the technology used, have changed and developed alongside the television environment. TAM systems have been able to handle the spread of television to almost universal penetration, the growth of screen sizes, the growth of two and more sets per household, improved screen definition, the growth of TV channels, the arrival of colour, varying broadcast delivery platforms and, potentially most revolutionary of all developments, the spread of recording devices which could free viewers from the timings of broadcaster schedules.

The technology of TAM systems has developed from reliance on mechanical set meters and paper diaries to smart meters with overnight or live data delivery and people meters replacing diaries. Sometimes Personal People Meters (PPM's) have been used to replace set and people meters, and panel sizes have been increased to improve the measurement.

Only very little viewing was being missed. TAM systems generally could measure all viewing opportunities with the exception of a small number of portable television sets and some forms of out-of-home viewing. TAM systems developed methodologies to include guest viewing in private households in viewing figures, and analysis systems were developed and marketed to provide users with the data they needed.

Alongside all of this, both airtime buyers and sellers as well as research agencies met to discuss in detail the changes and improvements to all aspects of TAM systems. As these systems are based on sample surveys at their core with the statistical and methodological limitations inherent, they could never be made perfect. However, great effort has gone into

making them as good as they could reasonably be so that traders can have confidence in the data produced as representative of reality.

As the measure of the most effective and thus accountable advertising medium, TAM systems have become much more complex and costly than the measurements used by other media. Such a complex and costly system would never have been developed had it not been for the necessity to trade airtime. This begs the question; if the TAM systems are as good as we can make them, then why change?

The changing television environment and the effects on TAM

Cracks in TAM systems began to appear even during the last millennium.

Since TAM panels are samples of households, social changes in developed countries (e.g. declining birth rates, growth in divorce, more adults living independently) meant that household sizes declined markedly over the decades. The TAM system may be household-based, but it is people, not homes, who watch television. To respond to this situation, household panel sizes were increased periodically to make up for the shortfall, but at greater cost and effort and at a time when people's willingness to co-operate with such research activities was declining. In addition, there was a growing belief that populations were becoming more heterogeneous thus complicating the task of getting fully representative samples.

Perhaps most importantly, even before the emergence of digital broadcasting, the development of broadcast platforms increased the number of television channels available to viewers. Although viewing time kept increasing, the growth in the number of television channels meant that audiences began to fragment. New and often smaller audience channels could not be measured as accurately as the bigger channels by existing TAM panels. Zero ratings as measured became common. It also meant that established channels often saw their viewing decline

along with the accuracy of their measurement. This was no one's fault, but just a statistical fact of life. Without an alternative system, airtime markets had to live with this.

At the beginning of this millennium, the limitations of existing TAM systems have become increasingly apparent as the viewing environment was revolutionised by more channels, the internet, more screen types and new sources of audio-visual content. With the switch to digital broadcasting came an enormous increase in the number of television channels available on television sets. This further increased the pressure on TAM panels sample sizes to measure audiences with any reliable degree of statistical accuracy.

The internet as a source of audio-visual content has added a new delivery platform and further increased the variety of content whose audiences are to be measured. When viewed on a television set, this viewing could be identified and measured by TAM panels, albeit still within the limitations of sample size and representativeness.

However, it is the explosion in screen types which has proven to be the greatest challenge to existing TAM systems and their methodologies. Desktop PC's, laptops, tablets and constantly developing and sophisticated mobile devices have all become important screens for viewing audio-visual content via the internet and for viewing anywhere. None of these types of screens can readily be metered like television sets and thus cannot have viewing on them measured as is done with television sets. To add to all this, new suppliers of audio-visual content available via the internet (such as SVOD services) have grown enormously in population coverage and size, and this has played a big part in encouraging the viewing of audio-visual content on screens other than television sets.

Questions that would have had no meaning a generation ago now loom large. What is television? What is a television set?

These challenges have in effect proven to be beyond the capability of existing TAM methodologies to deal with adequately. One result of this has been that as viewers, especially younger ones, have increasingly taken to watching broadcast television content and other audio-visual material on screens other than television sets, so viewing television as measured by TAM panels has been shown to be in decline in a number of countries.

This led many to talk about the death of television, but the opposite is the case. Millions of households have acquired new television sets with screen sizes and features that would have been undreamt of until recently. At the same time, access to television has exploded with the growth of screens and screen types. The majority of people today carry around with them all the time and use what are in effect portable television sets, just as viewing on the television screen has significantly increased with the emergence of streaming of on-demand content.

The emergence of Return Path Data

Despite difficulties for TAM systems to adjust to all these changes, these developments have not been critically damaging to airtime trading. While new audio-visual internet content providers compete with television broadcasters for airtime revenue, both have found new ways to trade. Delivery of audio-visual material on the internet provides the opportunity for return path data (RPD), the electronic noting and counting of material delivered. So a new market has developed where the trading of airtime uses these data as the currency.

This has two positive characteristics. Firstly, it has enabled broadcasters to generate their own big data on performance, and secondly, since these data can be of census quality, it means that even the smallest items can be measured with the same level of confidence as larger ones.

It is not just non-broadcaster suppliers of audio-visual content who have built successful businesses

trading with such data. Television broadcasters have also made their content available via the internet to all screens, either through streaming of live, playback or other content that was not yet broadcast. Advertising in and around this content has also generally been traded with RPD. This RPD is limited by being a measurement of delivery to a screen, but can have the benefit of being of census quality.

Those running TAM systems have not been idle in facing the changed environment. To maintain the integrity and status of TAM systems, it has been the opinion of many of those involved with them that the systems need to extend and develop their coverage to keep up with the current environment. Over the past decade, much work has been done to enable the measurement of viewing across screens and platforms in a number of countries (see examples in part 2). However, whilst the currencies exist for trading, advertisers and their agencies have lacked a single measurement to answer the core questions: I am advertising across channels, platforms and screens. Who saw my advertising? How many times? Who were they?

Extending TAM beyond television sets – introducing hybrid measurement

The measurement of viewing across linear and non-linear distribution channels in most cases leads to a hybrid solution of one form or another, in which panel-based measurement is complemented by census-level data.

The measurement of content consumed on the Internet allows for the production of census-level data, also referred to as machine data or return path data (RPD), and this gives an accurate account of total consumption, potentially across all devices and screens. Every video stream can be detected, including the time and duration of viewing and any actions carried out by the viewer, such as pausing or stopping the content. It does not require any extrapolations to estimate the viewing behaviour of the population as a whole.

Sample panels continue to be vital in telling us about people's viewing behaviour, but they will always be limited statistically, and RPD may be the partner panels need. Census data solve the statistical problems that come with relatively small samples, especially in measuring small things, but can only tell us about delivery to devices. Moreover, it tends to be the newer, often smaller audience channels which are likely to be delivered via the internet and thus can especially benefit from an RPD-based measurement.

For a complete understanding of who and what was consumed, census-level data needs to work alongside a panel, which can deliver information on demographics, such as age, gender and other attributes, and for this reason panel-based measurement remains a central component of all the hybrid Total TV measurement approaches currently being developed. If we can bring sample panels and RPD together, can we benefit from the advantages of each and minimise the drawbacks of each? That is the essence of the hybrid measurement solution.

Approaches to measurement of viewing beyond the TV set

There are a number of routes that have been taken by those involved in TAM systems and various issues have arisen.

An understandable first route has been to follow the viewers and extend the measurement of television via panel size and/or from television sets to other screens. In the past, dealing with the problems of a limited sample size would naturally be solved by enlarging the panel to enable better measurement of fragmented viewing on television sets. Today this is not seen as a viable nor a practical solution to the problems. To make a statistically significant improvement to the measurement, there would need to be panel size increases on such a large scale that they are likely to be prohibitively expensive or practically inoperable or both.

A related variant that has been considered is to recruit a panel several times larger than the existing

one, but only to install television set meters in these households. That greatly lowers the burden on panel members as well as the cost that would be involved in fully multiplying the TAM panel size. The existing TAM set and people meter panel can then provide statistical factors to populate the data from the set meter-only homes. This route aims to provide an equivalent to the large panel size increase, multiplying it several times without those cost and practicality issues already referred to.

Neither of these routes, however, provides a solution to the need to measure viewing on multiple screens.

Thus, another route is to follow the viewer and extend the TAM panel to cover non-television screens. Currently two approaches exist. The **Software meter/Virtual Meter** and equivalents is a piece of software that can be downloaded onto non-television screens and which can mimic the behaviour of set and people meter systems. Like the set meter, the software meter can note when a device is on, what is on the screen and, after asking who is viewing, it can generate viewing data for individuals. It has been a continuous process to deal with the different and newer types of screens and operating systems. Alongside the changing viewing environment, the software meter has had to change as well. If a software meter is installed on an existing TAM panel, then the entire system can measure the same people's viewing across all screens. However, this would add to the respondent task, and could result in a lowering of levels of panel recruitment and compliance and have negative implications for cost and data quality overall. If a separate panel is recruited, using the Virtual Meter to measure viewing on non-television screens alongside the existing television panel, then that would ease respondents' burden but likely add to the cost and complexity of handling data from two panels.

The **router meter** is similar in principle. In this case, a meter is attached to the household internet router or a router incorporating a meter replaces it. Then, as with the Virtual Meter, the system notes what content is being delivered to screens.

These approaches aim to deal with the spread of television and other audio-visual content onto other screens and measuring the audiences generated by that. However, they still depend on panel and sample sizes and thus the statistical limitations involved. How can this limitation be mitigated?

Challenges to overcome

The hybrid solution has been a simple objective to state, but a very complicated one to carry out in practice. Despite the years that have passed during which hybrid solutions have been on the table, it more often than not remains work-in-progress, or even work yet to commence. There are a number of reasons for this.

Firstly, the environment keeps changing. It can seem as if no sooner has a technical solution been found to a problem than a new problem is diagnosed or arises, a new type of screen comes to the market, a new delivery system is developed, viewer behaviour changes and so on.

Secondly, whilst those involved in developing hybrid solutions have largely been familiar with the strengths and weaknesses of panel data, dealing with RPD has proven a voyage of discovery. Where does the RPD come from? Whose are they? How are they defined? What is their quality? How do they develop? Outside of the television environment, issues have arisen in markets which bring these questions into prominence. Governance bodies (such as the Media Ratings Council in the US or Centre d'Etude des Supports de Publicité in France) have attempted to bring some basic quality and consistency to RPD. In addition, what part if any should be played by data from internet measurement panels, set-top boxes, smart TVs, telcos? All this is not a static but has been developing as the years pass.

Thirdly, what in detail do we want to do with the data from panels and RPD? Is this fusion, data integration, data merger or something else? How is this to be done when the nature of panel data and RPD can be different? How are data on a given number of individuals to be brought together with much larger quantities of data about machines? When relevant, which data set is the host and which the added ingredient? In particular, for the measurement of coverage and frequency (how many and who saw the advertising and how often) there needs to be a methodology to deduplicate, i.e. to trace the same individual across different screens and platforms. It has all proved to be a much bigger task than originally anticipated.

Even when accomplished, how can the resulting hybrid data be evaluated as new TAM panels have been in the past, to check that the new data are correct and explicable? How will those using the new data be educated to understand what they are using and how they have been produced or will they simply have to believe the output from a black box methodology? How can those using the data raise queries and adjudicate if they do not fully understand where the data come from and how they were produced? Will analysis systems be rewritten and newly developed to enable the analysis of new data and thus viewer behaviour over time? In addition, this all needs to be done in an environment which is at least GDPR or equivalent compliant?

These are all big questions but there are some even more fundamental ones: What are we trying to do and what is it all for?

At one end, the objective is to measure consistently the audiences for broadcaster content whatever the screen, whenever and wherever seen. At the other end, and especially so if it is advertisers and their agencies who are driving the development, the objective would be to measure with a single measurement the audiences for any audio-visual that may carry advertising whatever the screen, whenever and wherever seen and without boundaries as to the nature and origin of the content around the



advertising. All parties may share an interest in all of this but their priorities may differ. However, the imperative to have a currency to trade with, which has driven television audience measurement in the past, is much weaker for a hybrid system because trading already takes place without it and has done so for years. Yet, the ability to analyse audio-visual advertising across all screens and platforms is one especially for advertisers and their agents in pushing for hybrid solutions.

Privacy issues

A commitment to data privacy is of fundamental importance to any audience measurement system. Aside from a moral obligation to protect personal data and prevent its misuse, the willingness of individuals to participate in measurement panels will inevitably be hindered by any potential concern that their information may not be treated in the strictest confidence.

As panel-based measurement moved from the television towards more personal devices such as smartphones and tablets, the range and type of monitored activity widened and could lead to panellists' reluctance to submit information about their online activities across several devices.

At the European level, the 'cookie rule' in the current ePrivacy Directive requires user consent before storing information, or gaining access to information already stored, in the terminal equipment of the user.

Consent is often collected through banners or pop-ups which give users the opportunity to accept the collection of data or at least informs them that the processing of data will take place if they continue to browse the website. Users need to be presented with mandatory notices clarifying what information is being processed for what purposes and which are the recipients, or categories of recipients, of the personal data.

The General Data Protection Regulation (GDPR), enforced since May 2018, increased the standard for what is meant by 'consent'. Namely, the rules require a true opt-in from the user through an affirmative action; silence or pre-ticked boxes should no longer be accepted, as confirmed through the Court of Justice of the European Union's case law¹.

The GDPR has also strengthened existing consumer rights (and introduced new ones) which carry practical challenges for companies, such as the right to object to the processing of personal data, or the right to have personal data deleted.

All these changes need to be included in measurement companies' privacy policies, but also by broadcasters in their contractual relations with audience measurement partners. The penalties for breaching the new data protection framework have been substantially increased, therefore businesses will want to clarify the liability of each partner in case of infringement.

Two main issues have arisen through the implementation of the new rules:

Firstly, national data protection authorities' interpretation of what is acceptable under the new rulebook tend to diverge². As a result, businesses often operate in legal uncertainty when it comes to audience measurement trackers (e.g. analytics cookies).

Secondly, there can sometimes be tension when it comes to the legal qualification of the online audience measurement relationship for personal data processing. While the publisher/broadcaster should always qualify as a controller (because it determines the purposes and means of the processing of personal data), the status of the audience measurement

partner is often subject to discussions. As an example, the 'processor' status restricts the audience measurement company's autonomy to process data, which can give a sense of security to the publisher/broadcaster, but for that very reason it can also be burdensome. On the other hand, a 'joint controller' status between the broadcaster and the audience measurement company provides more leeway for the day-to-day use of the data, but the broadcaster's oversight is more distant.

Finally, as the existing ePrivacy Directive is being reviewed, it must be noted that the new framework will be likely to include a tailored consent exception for audience measurement purposes. However, it is unclear when the new Regulation will be finalised since discussions have been stalled for 3 years and the entry into office of a new European Commission in December 2019 is expected to further delay the legislative process.

What will hybrid measurement data be used for?

Data from TAM panels are used for a variety of purposes, such as airtime trading currency, campaign planning and evaluation, programme performance measurement, programme scheduling and evaluation, broadcaster performance measurement and so on. Will the hybrid data have the same uses? Maybe that has been the expectation till now, but trading has for long been satisfactorily carried out without it. TAM panel data continue to provide the currency for trading advertising around broadcaster content seen on television sets – just as RPD in one form or another continues to be the trading currency for other audio-visual advertising delivered via the internet including that relating to television broadcasters' output. Why should that change?

¹ See Case [C-673/17 Planet49](#)

² As an example, while current [interpretation](#) of the UK Information Commissioner's Office is to always require consent (including for first-party cookies), the French CNIL deems consent not needed when following a strict list of cumulative requirements (no cross-reference with other collected data, only anonymous stats, etc.). Finally, in Germany, recent DPA interpretation warrants consent if the third-party collecting data also uses it for its own purposes and/or if the behaviour of website visitors can be traced in detail, for example when keyboard inputs, mouse or swipe movements are recorded.

Changing what are now well-established currencies could be controversial and difficult. Those satisfied with the current trading data and the revenue earned using them may see no reason to change. Those who may be unhappy with how they perform using existing currencies may wonder if a change would help them, but may also be likely to fear what a change might bring to them. If different parties in the market go in different directions, chaos could ensue. What would be the mechanism to get an entire and complex market to change currencies?

Some parties to airtime trading now expect trading to continue as now, at least for the foreseeable future, even after hybrid solutions have been successfully developed. They see the hybrid as filling the gap for cross-screen campaign planning and evaluation. This raises the question of financing.

Traditionally, advertisers and their agencies have put down the challenge to television broadcasters – i.e. to trade with advertisers, they must provide the trading currency that we can all have confidence in. Notwithstanding the argument about whose money it really is – the broadcasters, the advertising agencies, the advertisers, or their customers – it has generally been television broadcasters who have paid most or all of the bills for audience measurement. Campaign planning and evaluation matters to everyone in the airtime market, but it can easily be argued that it is of special concern to advertisers and their agencies. So, if the hybrid data are not providing the trading currency, the lifeblood for trading, how much financial and other effort is it worth for broadcasters to spend on them? Until now, the development of hybrid solutions has been largely funded by broadcasters who do have an interest in campaign planning and evaluation when that campaign is carried with their content. What imperative should they have to provide the data for campaign planning and evaluation when that campaign is at least partly carried with other, non-broadcaster content?

In the meantime, some participants in the airtime market have announced that they are developing their own analysis systems bringing together available

data to try to do the job of the hybrid whilst waiting for an industry-wide hybrid solution on their market. These initiatives have been positioned as temporary whilst awaiting the arrival of the industry-wide hybrid. One question that arises is to ask if these initiatives meet the need, why bother with the entire hybrid development? On the other hand, if there are multiple such systems in a market, how can the potential for different systems, different methodologies and different results be avoided? Does that matter? If the aim is for an agreed methodology and consistent results then one system should suffice and that brings us back to industry-wide approaches.

Defining the scope of future total television measurement

In part 2 of this report are overviews of the developments in a number of important markets, and one observation that stands out from those examples is how approaches vary from market to market. The overall intentions may be the same, but the details of objectives and methodologies often differ. That can be good in that this could help identify the pros and cons of alternatives, especially of assistance to those coming later to hybrid development.

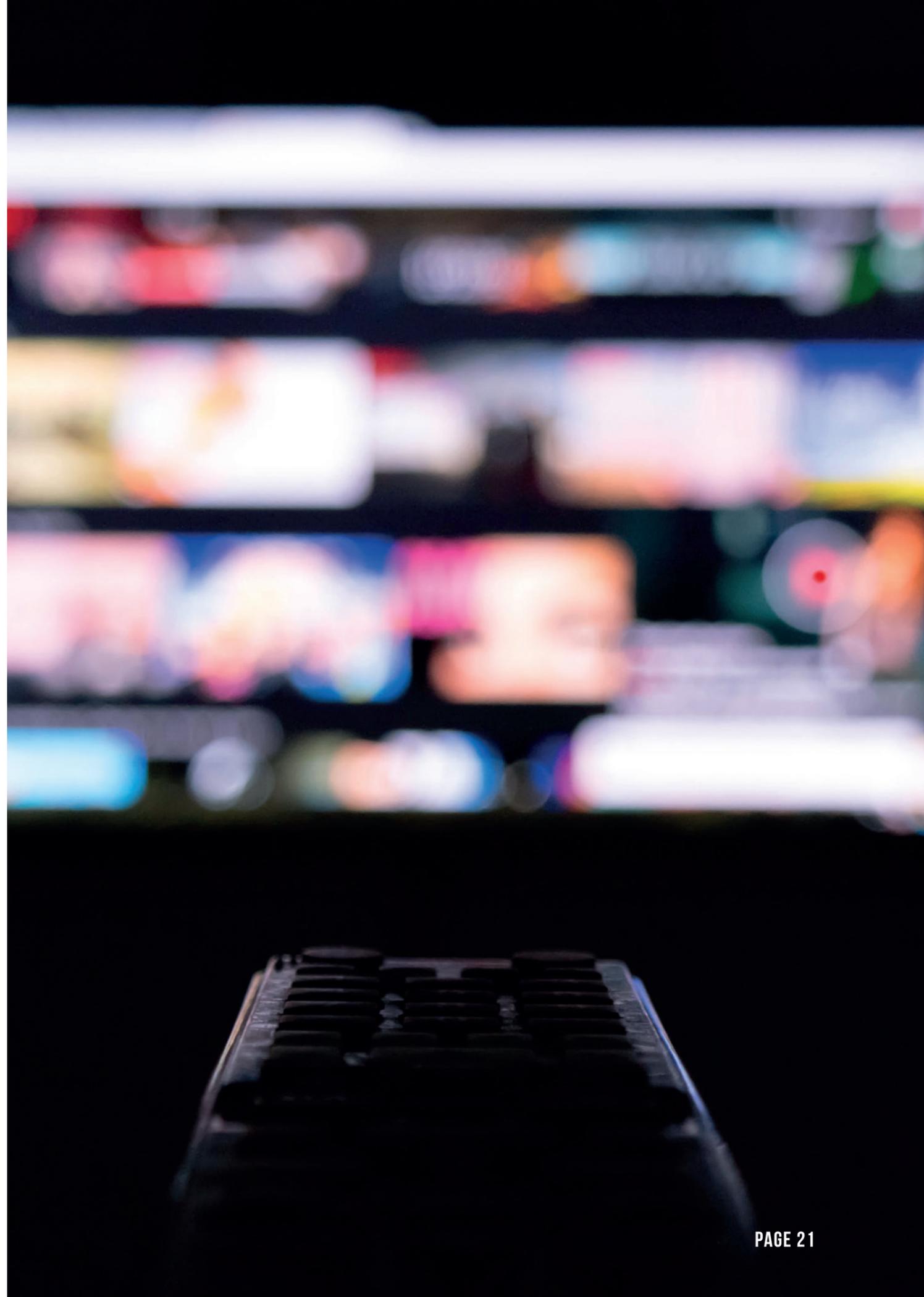
However, different approaches may also complicate any attempt to produce cross-market data. These initiatives are being driven by the broadcasters and their JIC's and may have slightly different viewpoints, interests and priorities.

Some may be aiming for a new trading currency which can also be a new planning currency. Others, may be aiming for a planning and evaluation currency, but not to change the existing trading currencies. As noted above, some may be aiming for a measurement of broadcaster content wherever and whenever it is viewed. Others may be aiming for a measurement of all audio-visual from all sources. Or the objective may be anything in between these two extremes. Some may be seeking to involve non-broadcaster audio-visual content suppliers and platforms in this work, while others may want to maintain the broadcaster-

specific nature of the work. Some broadcasters may be wary of extending what they see as their measurement to their competitors or may not regard themselves as being in the same market as non-broadcaster audio-visual content suppliers.

The disadvantage of including non-broadcaster video content, aside from the additional complexity in integrating the publishers themselves, is that it naturally dilutes audience shares. The shift from a stable and relatively small number of measured publishers to a more volatile and larger universe may actually render audience shares meaningless. On the other hand, delivering equivalent measurement data helps to bring some perspective to the relative size of television as compared to other audio-visual sources. After all, individuals spend far more time watching television than they spend with online publishers on average – even those with a quite high reach, such as YouTube and Facebook.

There are important technical issues that would follow in trying to produce a measurement that meets the needs of all parties. How far would broadcasters be willing to change what they have now and the data produced to meet the different needs of other parties? How far would this even be possible? Then there is the issue of geography. There are noteworthy exceptions but broadcasters and their JIC's generally are based in a single market or country. There are good historical, geographical, linguistic, regulatory and cultural reasons for this. Though the broad outlines of TAM systems may be the same between countries, there are likely to be differences, for example regarding definitions or calculations methodologies. However, the new non-broadcaster suppliers of audio-visual content tend to be international even if the advertising they carry may not be. How can these competing needs be managed, merged and met?





**PART 02:
ADVANCES IN
HYBRID TELEVISION
AUDIENCE
MEASUREMENT –
MARKET EXAMPLES**

CANADA – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (Numeris) |
| TAM panel size? | 4,500 Households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: TAM measurement is based on personal exposure to audio-encoded broadcaster content, regardless of delivery device. Smaller markets are measured via bi-annual diary sweeps. In-progress implementations include set-top-box RPD and router-based metering for measuring online audiences. |
| Are these data used for trading? | Yes |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Work in progress: Census-level inputs to be used for calibration of panel audience data (both linear and online) are currently being worked on. |
| Data sources used? | Set-Top-Box RPD for linear, and census-level tag data for online. |
| How is deduplication done? | Deduplication is being done through a combination of single source panel and fusion techniques using viewing and demographic fusion hooks. |
| Is advertising and/or content measured? | Currently, content is measured and advertising is inferred. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | All broadcaster output on owned and operated platforms will be measured once online metering implementation is complete. The measurement of broadcaster output consumed via non-owned platforms is not yet in the scope. |
| Is non-broadcaster content measured? | Based on currently planned implementations, in-home Pure-Play content (e.g., Netflix, YouTube, Prime Video, Disney+) will be measured based on aggregated time-spent - i.e. not by channel or program. |
| Data used for airtime trading? | Trading currency is live and time-shifted viewing of television commercials within seven days of broadcast. |
| Are these data used for planning? evaluation? trading? | All |



Numeris Measurement Foundation

Canadian television and radio audiences are currently measured using the Personal People Meter (PPM), supplemented by a twice-yearly diary for each medium to cover smaller market areas. This work is carried out by the research and audience measurement organisation, Numeris. By inserting a separate set of codes for linear and on-demand television content, broadcasters today can ensure that all viewing can be captured by the PPM device and attributed by delivery platform. Under the existing model, any online live-streamed viewing is folded into the regular currency. Significant developments to the core measurement of Video in Canada, are now underway.

Targeting Granularity with RPD at Scale

Supported by a decision from Canada's broadcasting and telecommunications regulator, the CRTC, cable television operators were asked to release the viewing data from their set-top boxes to enrich audience measurement. This solution is particularly valuable for smaller, niche channels, which are not well served by panel-based measurement systems.

A CRTC working group selected Numeris to conduct a successful technical test that combined RPD data from multiple set-top box providers. Subsequently, a full-scale proof of concept was undertaken in 2018, where Numeris was able to design an enhancement to the TAM service which would include RPD data from six Broadcast Distribution Undertakings (BDUs). The development of an Enhanced TAM measurement solution (ETAM) is now underway, where RPD from more than 85% of Canadian cable providers will be added to the solution. Numeris anticipates the full-scale production pilot of this new ETAM solution, will begin in February 2021.

Cross-Platform Audience Measurement Video Audience Measurement (VAM)

It is a significant strategic solution currently being built by Numeris. As with most VAM solutions, it is

intended to help deliver an audited standard measure originating from one neutral, credible and transparent organisation, for all video distributed across all platforms and devices. Its purpose is to characterise the unduplicated value of digital video in the media space, and to provide a deeper understanding of who is watching what, when, and how.

Through the VAM solution, Numeris will be working to extend the measurement of Canadian viewing to include as much of the digital video landscape as possible. Numeris will capture all broadcaster content across platforms by device type. It will also provide time-spent measures of digital-first services such as YouTube and Amazon Prime, Disney+ and Netflix as part of the initial service. Numeris is actively working to enhance this granularity with digital first partners.

The build is being phased-in geographically, and beta data from the first few markets is expected to arrive in summer 2020. Once complete, the service will include a full national online panel of over 5,000 households to complement the existing TAM service. Numeris has also begun an industry-wide conversation around the associated cross-platform metrics that will come with this new measurement service.

Numeris believes the foundation for future measurement must be high-quality panel level data to support and contextualise data integrations, in a transparent and audited system.

DENMARK – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | MOC |
| TAM panel size? | 2,600 individuals |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: A digital meter panel measures viewing via streaming on all connected devices, and a cookie-based web profile panel covers all digital devices. All devices are measured (TV, laptops, tablets and smartphones). |
| Are these data used for trading? | Yes |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use: New hybrid measurement delivering daily infused online and TV ratings launched on Jan 1st 2017. |
| Data sources used? | Tagging data (census data) and people meter data. |
| How is deduplication done? | By use of reference panel. |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | All broadcaster output on broadcaster platforms is included. Broadcaster output on other platforms such as distributor's streaming services is also included. Broadcaster output on other platforms such as YouTube or Facebook is not included. |
| Is non-broadcaster content measured? | No. Others have been invited to join, but due to the tagging obligations, they have declined. |
| Data used for airtime trading? | The fused online and TV ratings currency is used for airtime trading. |
| Are these data used for planning? evaluation? trading? | All |

DENMARK

Daily fused streaming- and tv-ratings

Denmark is one of the countries where the market has access to a cross-media ratings' currency in the form of daily fused streaming and TV ratings. This has been in place since January 2017, with Kantar as the provider of the service for the Media Owned Contract consisting of Turner, NENT, Discovery, DR, Disney/Fox, Viacom, and TV 2.

The methodology is based on a standard TAM panel (1.200 households / 2,600 individuals) measuring TV sets and smart TVs. This panel is complemented by two online panels: a separate digital meter panel of 1,100 individuals measures viewing via streaming on all connected devices (PCs, tablets and smartphones); and a cookie-based web profile panel composed of 25,000 people covering all digital devices. The latter provides additional information on the profiling of streaming viewers.

Streaming data is collected through tags implemented in the online content of the eight participating broadcasters and their proprietary players, as well as online players of pay TV distributors. This enables Kantar Media to get census data – total traffic measurement of all tagged content. Data from the digital meter panel is fused with data from the TV panel, while the web profile panel and census data are used for calibration.

The fusion is done on respondent-level data, thus sustaining the option for reach calculations on user-defined targets.

Reporting and insights

During the first three years of the new service, the uplift in viewing (daily minutes, all individuals 3+) due to streaming increased from 3% in 2017 to 6% in 2019. It must be noted that several factors are in play: Firstly, viewing of online content has increased in recent years in Denmark, while linear television viewing has declined. Secondly, the amount of correctly tagged content has been steadily growing,

allowing for more streaming to be registered as valid online viewing and becoming part of the validated ratings' currency in the market.

Streaming data in the fused streaming- and TV-ratings are based on correctly tagged content viewed within 7 days of broadcast on a linear channel. Thus, the reported ratings do not reflect non-broadcaster streaming (e.g. Netflix, HBO Nordic or YouTube) as tagging requires active participation in the measurement. Furthermore, pre-broadcast viewing or content viewed more than 7 days after linear broadcast are also not included.

As a way to get oversight of non-reported viewing in the data collection and reporting methodology, Kantar runs an additional biannual report based on a questionnaire, which provides insights on the amount of streaming on non-broadcaster and pay TV platforms. According to the 2Q 2019 edition of this report, the tipping point between streaming and traditionally distributed TV has been surpassed for people between 12-39 years old – meaning that over 50% of their daily viewing time takes place via streaming.

From the very beginning of the Danish Television Audience Measurement via meters in 1992, it has been the goal to be transparent about what is included in the official measurement system. While the challenge of data collection and audience measurement has never been more immense than the case is today, it is positive that the market has accepted the fused streaming- and TV-ratings as a fair and realistic reflection of viewing behaviour in Denmark.

FINLAND – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | MOC |
| TAM panel size? | 1,000 Households (2,100 individuals) |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes (except advertising): Total TV measurement of content and channels (excl. advertising) is done with router meters in the TAM-panel, incl. census data from main broadcasters. All devices are measured. |
| Are these data used for trading? | No |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use: Hybrid measurement (Total TV) has been up and running since autumn 2018. The possibility of adding advertising to the measurement is currently being reviewed. |
| Data sources used? | TAM (Finnpanel, Nielsen meters), Kantar router meters in the panel + census data of online viewing (Adobe + other). |
| How is deduplication done? | N/A |
| Is advertising and/or content measured? | Broadcaster AVOD content on all platforms is measured, broadcaster SVOD not fully. Other platforms on other devices than TV are not measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | Not specific content, but Finnpanel measures and can report the amount of usage of Netflix, HBO Nordic and Youtube from TAM panel home networks. |
| Is non-broadcaster content measured? | Based on currently planned implementations, in-home pure-play content (e.g., Netflix, YouTube, Prime Video, Disney+) will be measured based on aggregated time-spent - i.e. not by channel or program. |
| Data used for airtime trading? | TAM is the currency for trading TV campaigns. AVOD is traded separately (based mainly on adserver data). |
| Are these data used for planning? evaluation? trading? | Total TV data is used for planning and optimisation of campaigns on TV channels and AVOD services, and for reporting total audiences of programs in different target groups. |



A single-source measurement with census data

In Finland, Broadcaster Total TV is monitored thanks to a single-source measurement solution based on the TAM panel that is already in place and consists of 1000 households / 2,100 individuals. It measures TV-sets and Smart TVs using Nielsen's technology, and other devices (PCs, tablets and smartphones) using Kantar Media's router meter. A method and calibration similar to that used in Norway have been up and running since late 2018.

The three main Finnish broadcasters – Nelonen, MTV and YLE – also deliver online viewing data to Finnpanel / Kantar Media to enable the calibration and Total TV ratings. Broadcasters have switched from Comscore to other online traffic measurements: YLE and MTV use Adobe Video and Nelonen uses a proprietary method. These measurements are audited quarterly by an expert to ensure the quality and uniformity of the census measurement and to avoid under- or over-reporting.

This information is used to calibrate the data derived from the single-source TV and router meter measurement. The Total TV measurement delivers ratings and reach for programs on basic demographics as well as the viewing time and reach of the VOD services as well as the total (TV + VOD) for each broadcaster involved. In 2019, the total level of online viewing of all viewing was 7% and as much as 32% on target group 15-24.

Improvements in the methodology and prospects

While the reporting has already been up and running for 1,5 years, Finnpanel has done some enhancements during 2019. AVOD and SVOD content is now reported separately (the same content may be available in FTA channels, AVOD and SVOD). Census data that overlaps TV-viewing on the same TV screen has been fine-tuned in the calibration process.

In 2020, Discovery Finland is expected to join the Total TV reporting with their Dplay-service. The possibility to measure and report Total TV campaigns is also under discussion and investigation, and a continuation of the auditing of census data is planned as the quality and stability of it is crucial.

FRANCE – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | Médiamétrie which acts both as a measurement company and as a JIC for TV, radio and internet measurement. |
| TAM panel size? | 5,000 households (Mediamat Panel) 4,500 individuals (Portable Meter Panel) |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: A new official TAM launched in 2020. It combines data from the Médiamat panel (measuring TV set consumption at home for the 4+ population, including guests aged 4-14) and a new portable meter panel (measuring radio and OOH TV consumption on all devices for the 15+ population) via watermarking. Panellists are equipped with a pager which allows the separation of OHH and in-home TV consumption. Devices measured include TV set consumption at home and OOH TV consumption on TV, desktop, mobile or tablet. |
| Are these data used for trading? | This data is used for trading, and there are plans to also integrate TV consumption on internet devices at home in the official TV ratings in 2021. |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use: Streaming data from Internet screens are available using our eStat tag, used by all major channels. Discussions to expand are in progress with TV operators in France. |
| Data sources used? | Mediamat Panel and eStat Data |
| How is deduplication done? | Using a single source panel measuring TV and Internet consumption. |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | Only broadcasters who have included a tag are measured. All major French broadcaster platforms are measured or are in the process of being included in the measurement. Broadcaster content on other platforms (e.g. Dailymotion, MyCanal, B.TV) is measured with the eStat tag, as well as YouTube using a different methodology. |
| Is non-broadcaster content measured? | It is possible in the Internet Video Measurement, using the eStat tag. Content providers measured include for example Prisma Media, Groupe Figaro/CCM Benchmark and Bouygues. |
| Data used for airtime trading? | Médiamat data |
| Are these data used for planning? evaluation? trading? | All |



The official TV ratings in France

Television audience measurement is carried out in France by the research company Médiamétrie. The organisation has a rather unique position as it acts both as a measurement company and as a JIC for TV, radio and internet measurement. It also provides its scientific and technological expertise to Kantar that operates the press measurement in France. For its measurement, Médiamétrie has built fixed and portable meters, and has its technology licensed to several countries, including India, Morocco and Norway.

Traditional TV audience measurement in France covers all TV sets in-home, including time-shifted TV (program viewed via digital video recorders (DVD-R & PVR) and replay TV (services provided by channels that let viewers watch TV programs on demand for free), and Out-of-home TV consumption has recently been added to the official TV rating.

Additionally, Médiamétrie has provided four-screen total TV ratings (without demographics) on a daily basis at programme level since early 2016. Data on demographics are available on a monthly basis at TV channel level. As part of this process, a four-screen single source panel consisting of 3,500 households is used, which is co-owned with Google.

Mediamat 2020: From TV ratings on a TV set to a four-screen measurement in the official TV ratings

On 30 March 2020, Médiamétrie launched a new official TAM which combines data from its established Médiamat panel (5000 households, 4+) which measures traditional TV audiences at home, and a new portable meter panel (4500 individuals, 15+) which measures radio and out-of-home TV consumption thanks to watermarking recognition.

The panellists are equipped with a pager which detects beacons at home, allowing a separation of out-of-home and in-home TV consumption. TV consumption

of this panel will be fused with the Médiamat Panel in order to propose to the market an official TV rating including:

- The TV set consumption at home for the 4+ population (including the guests for the 4-14 population).
- Out of home TV consumption on TV, desktop, mobile or tablet for the 15+ population.

The new official TV measurement covers all channels for both content and advertising analyses. As a next step, Médiamétrie plans to integrate the TV consumption on internet devices at home in the official TV ratings in 2021.

Internet Video measurement to benchmark all video publishers

Médiamétrie's online measurement expertise has provided an opportunity to measure Internet usage and video across screens and devices. The first metered internet panel was launched 18 years ago under the company's joint venture with Nielsen – called Médiamétrie/NetRatings – and this was expanded to include smartphones in 2010 and tablets in 2012. These mobile and tablet panels include iOS and Android devices. Since 2013, Médiamétrie has been working to unify these panels into a single measurement, and the results of the first three-screen Internet measurement were released in January 2015.

Médiamétrie also developed a video content measurement on all internet screens, based on a single source Google/Médiamétrie Panel and on census data (eStat Streaming logs). Since September 2019, YouTube results are published alongside other online video publishers as press and TV publishers.

The single source Google and Médiamétrie Panel

Set up in March 2013, this 3.500 household panel is audited, examined and supported by CESP (Centre

d'Étude des Supports de Publicité). Television audience data is measured by Médiamétrie using the same meter technology and data processing as for its TAM ratings service. The online measurement is relying on router data and has been extended by adding an on-device meter that allows a more in-depth capture of online audiences.

Enhanced measurement of thematic channels using TAM and set-top box data in a hybrid model

In 2014, Médiamétrie developed a new hybrid television measurement initiative to improve the granularity of the measurement for thematic channels, with the support of Pay TV Operator Canal+. This project is separate from the current four-screen measurement outlined above, and it uses different data sources and methodologies. In this case, the term hybrid refers to the combination of people meter TAM data and return path data (RPD) from a sample of set-top box television decoders. Therefore, census data does not form part of this model.

Smaller and niche thematic channels in France are challenged by the competition from online video platforms, and it is difficult to achieve granular audience reporting using the traditional TAM approach. Therefore, the objective was to enable measurement of thematic channels with greater granularity and to increase the reporting frequency. Médiamétrie's solution is built on RPD delivered initially by a sample of about 10,000 Canalsat decoders, with demographic information appended using an individualisation model.

The household data is acquired using CATI/CAWI surveys. The RPD data is then used to enrich the viewing data from the Médiamat TV measurement service. The challenges for this form of hybrid measurement are twofold: firstly, differentiating times when a decoder is on (and returning RPD) but the television set is switched off; and determining who and how many members of the household are watching at any given time. The first of these is addressed by using the TAM panel viewing data

to identify and transform RPD logs that do not correspond to actual viewing. The question of who is watching is addressed using an individualisation process.

Comparison of the results of this hybrid measurement with the Médiamat TAM data shows good consistency. The granularity of the measurement is improved, and use of a much larger sample than just the people meter panel provides lower volatility and fewer zero ratings.

This approach is not expected to replace TAM, as it is not yet adapted to provide a trading currency for large channels (or television watched on non-RPD compatible methods), but the objective is to extend the project to cover a greater range of thematic channels and TV operators in France in the future, as well as to measure Addressable TV.



GERMANY – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (AGF Videoforschung) |
| TAM panel size? | 5,400 Households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: Measurement via separate online panels for mobile and desktop with a single source share of these panels. Besides the TV set, AGF measures mobile (smartphone, tablet) and desktop devices (desktop or laptop). |
| Are these data used for trading? | No |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use: Data are available and being used for channel/programme audiences. |
| Data sources used? | Usage data from TV, mobile and desktop panels and census measurement data for streaming usage. |
| How is deduplication done? | Deduplication is done by panel measurement (hybrid approach that combines panel and census data, single source and data fusion). |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | Yes – all tagged content is measured. Broadcaster output on other platforms is not measured. |
| Is non-broadcaster content measured? | AGF is currently working on an open and integrated market standard into which third-party data can be integrated. |
| Data used for airtime trading? | n/a |
| Are these data used for planning? evaluation? trading? | n/a |



On the way to an integrated standard

AGF Videoforschung (AGF) is responsible for independent video measurement and research in Germany as a neutral entity. It continuously collects and analyses quantitative data on the use of video content and advertising. The company invests more than EUR 35 million per year to optimise its system and consults closely with all market partners, including broadcasters, advertisers and media agencies.

The AGF system currently comprises three panels for TV, desktop and mobile. A GfK-operated TV panel consisting of around 11,000 panellists in 5,400 households collects television usage data. Today, usage is mostly measured by way of audio matching using the TC UMX measurement technology. In addition, AGF has integrated single source measurement elements to capture online video usage in the original TV panel by installing routers in the TV households: The router meter is currently delivering data from 590 panel households comprising more than 1,200 persons. Using a router measurement technology developed by GfK on behalf of AGF, allows for the measurement of viewing of streaming services on smart TVs in the TV panel. This way, the average daily viewing of selected video platforms such as Netflix and Amazon Prime Video on big screens can be determined. By the end of 2020, AGF's service provider GfK intends to equip around 1,000 households with supplementary measurement technology, which should make it possible to also measure all other devices of the household members, including use on smartphones and tablets, for instance.

Measurement of video streaming usage

AGF cooperates with Nielsen to measure linear and non-linear video streaming through a desktop panel comprising around 15,000 panellists, measuring PC and laptop usage. These data are calibrated to the parallel census measurement and have been merged with the TV panel data since 2017.

AGF also cooperates with Nielsen on the measurement of video usage on smartphones and tablets through a mobile panel with around 6,000 participants. Mobile streaming data have been available to the market since May 2019.

Both the desktop and mobile panels deliver information on demographics, net reach values, page views and session durations, while the census measurement provides information on page views, overall usage and also session durations.

Integrated market standard

Since May 2019, AGF has been providing convergent video usage data (TV + Desktop + Mobile) on a daily basis and no longer on a monthly basis. The time lag from measurement to disclosure is now only eight days, instead of 28 days previously.

For both mobile and desktop measurement, only those streaming offers that are equipped with AGF measurement software (Nielsen SDK) can be tracked. The combined measurement of desktop and mobile usage allows publishers and agencies to differentiate performance values for streaming usage by device type.

When it comes to tracking video usage from third parties who do not participate in the measurement, AGF takes a different approach to integrate these data. Integration of such data in the AGF system can be done once they have been audited, bilateral contractual obligations have been fixed and data granularity and metrics comparable to those publishers measured with the SDK have been defined in accordance with AGF's specifications and conventions – of course respecting all GDPR-requirements. Based on a "follow the content" principle, i.e. the importance of measuring content and ads across platforms, AGF is currently working on an open and integrated market standard into which third-party data can be integrated.

Nielsen DAR

Another important project that AGF is currently pursuing is the measurement of cross-media campaign reach using Nielsen Digital Ad Rating (DAR). With this project, AGF is meeting an urgent need of the market. For years, advertisers and media agencies have called for a uniform standard for measuring campaign reach values (see the interview).



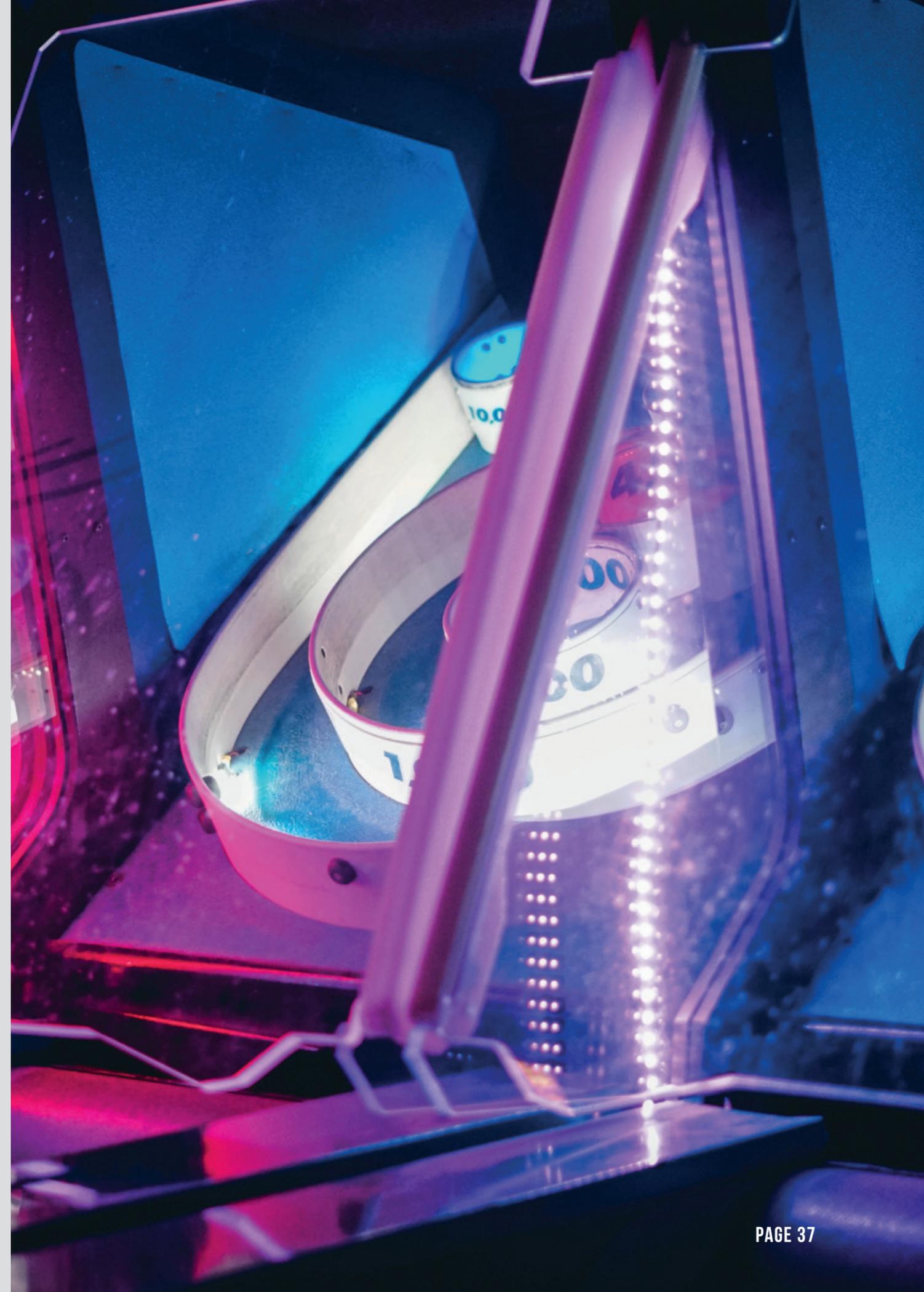
**Interview with
Kerstin
Niederauer-Kopf,
CEO of AGF
Videoforschung GmbH**

egta: *AGF is currently cooperating with Nielsen and has launched the project "Follow the Campaign". What does this project involve?*

Kerstin Niederauer-Kopf: With "Follow the Campaign", AGF extends the approach "Follow the Content" and is developing a cross-media measurement of campaign reach values in response to a genuine market need. Now more than ever, advertisers and media agencies are calling for the cross-channel transparency and comparability of offerings in view of fragmented media usage. As the long-time partner of AGF, Nielsen is offering an established tool, Digital Ad Rating (DAR), which is already in use in more than 20 countries.

egta: *How are advertisers reacting to DAR?*

Kerstin Niederauer-Kopf: In a very positive way. Our philosophy is to work with the market as closely as possible and consistently strive to meet the market's demands. The support we are receiving from agencies and advertisers is truly unique. By working together with Nielsen DAR, we provide answers to a crucial question of advertisers, namely the contribution of individual platforms to the development of net reach values. We will continue to work on the DAR project in order to deliver even more detailed data. In the meantime, more than a dozen campaigns have been completed and most of them have already been merged with TV. Additional tests in order to expand the data set and improve the methods are being planned. Our goal is to set a standard for cross-media campaign measurement.



INDIA – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|--|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (BARC India) |
| TAM panel size? | 180,000 individuals (44,000 households) |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | No |
| Is TV viewing being measured using hybrid method? | Hybrid method being discussed: In discussion with various non-linear distributors and working towards identifying appropriate source for data. <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> |

 “BARC India is privileged to be the currency of measurement for TV viewing in India – we measure and report with great diligence and statistical accuracy what India watches. The base of homes and individuals being measured is consistently growing. BARC India is the biggest measurement of TV audiences, in the world.”

--- Sunil Lulla, CEO, BARC India



BARC India Footprint

The Broadcast Audience Research Council (BARC) India is a Joint Industry Company founded by stakeholder bodies that represent broadcasters, advertisers, as well as media agencies. It powers efficient media spends and content decisions in a highly dynamic and growing television sector. Apart from the currency products for the TV industry, BARC India also provides a suite of insight products designed for Broadcasters, Advertisers and Agencies.

Some key features of BARC India are:

- Largest Audience measurement Panel in the world.
- We monitor 300 million minutes of video content across 600 channels.
- We measure what 836 million Indians watch on TV every day, every minute.
- Processing 10 PB data.
- Single currency behind transaction of 5.7 BN USD of TV advertising & content spends.
- Impacting 5.2 million jobs in the media & entertainment (M&E) industry and more in other allied industries.
- We measure 93% of all video content consumption in India.
- Measurement for 45% of Indian M&E industry (TV) with a vision to be the single source measurement for entire M&E.

Data Collection Mechanism

With a panel size of 180,000 individuals (44,000 Households), BARC India is the largest measurement company of its kind in the world. As determined by the Indian Ministry of Information & Broadcasting, the minimum panel size to be maintained is 20,000 reporting households to be raised by 10,000 households each year until it reaches 50,000, which is expected in 2020.

The BAR-O-meters (TV set meters) placed in BARC’s reporting homes are compact and use the latest

technology. They have a 3rd-generation OLED display (which is more visible to facilitate interaction between the viewer and the meter), and an embedded SIM to automatically upload viewing data (tie-ups with leading GSM operators ensure wide coverage). As they are indigenously manufactured, they cost almost one-sixth the price of imported meters, which has enabled BARC to increase the panel size to measure TV viewing.

The Indian system captures data about TV content consumed through all forms of distribution – terrestrial, DTH, analog cable, digital cable, IPTV etc.

BARC is planning to extend the measurement to digital advertising and to the measurement of linear broadcast feeds on digital devices through streaming over the internet. There is a planned phased approach to launch multi-screen measurement.

Data Reporting

BARC India pioneered the measurement of the rural market in 2015, which contributes to close to 50% of the TV viewing in India. This development had a significant impact on marketing and media planning, as only urban markets were measured and reported before 2015.

In 2019, BARC made the viewing split of Pay vs the Free Platform available to stakeholders. Pay Platform refers to households that pay to access TV channels. It includes Pay DTH (like Tata Sky, Airtel, etc) and Pay Digital Cable (Like Den, Hathaway, etc). The Free Platform refers to households that do not pay to access TV channels, and includes DD Freedish and Terrestrial connections. The split is at an overall Pay Platform (Pay DTH & Pay Digital Cable) and Free platform (Free Dish and Terrestrial) and is not available at an operator level.

Apart from the linear TV viewing data, BARC also reports time-shifted viewing (including VOSDAL for reporting purposes) as well as Simulcast viewing which provide details of programs broadcast

simultaneously on more than one channel. Viewing of individual channels is tracked through watermarking technology.

BARC Out-of-home TV Viewing

In 2018, BARC India began measuring OOH content consumption. It started with tracking viewership of individuals (15+) across more than 900 establishments in Mumbai, Delhi, and Bangalore, using more than 1500 TV set meters and using audio watermarking technology. This service turned out to be a game-changer for the industry as it uncovered a significant share of TV viewership which previously was not measured. The viewing data showed that out of the total OOH viewing, 70% accounted for sports followed by movies (10%) and music (8%).

In 2019, BARC India integrated TV and OOH TV viewing in the currency data, making it a first of its kind. This unlocked great value for the entire broadcast industry, especially for the big-ticket sport events like Cricket World Cup, Indian Premiere League etc.



IRELAND – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (TAM Ireland) |
| TAM panel size? | 1,111 Households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | In progress: Streaming meter being rolled out to 300 homes (260 on panel and 40 in non-TV homes). Devices measured: TV Set, PC/Laptop, Tablet, Smartphone. |
| Are these data used for trading? | No |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Work in progress: TAM Ireland is currently exploring ways to capture and report census-level data from the broadcaster OTT players' content and commercials, and how return path data can play a role in enhancing the panel data. |
| Data sources used? | Currently building a Broadband Panel. |
| How is deduplication done? | n/a |
| Is advertising and/or content measured? | Currently looking at options for capturing and reporting census-level data for advertising and content. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | Only at a topline level. |
| Is non-broadcaster content measured? | Only at a topline level. |
| Data used for airtime trading? | Nielsen TAM data for TV trading. |
| Are these data used for planning? evaluation? trading? | All (for linear TV only). |



The AV Data Solution: Providing an Interim Solution

Over the last years, TAM Ireland have been providing the Irish market with an annual update of the AV Data Solution; a snapshot of the total viewing market at a moment in time and provides reach, both net and incremental along with share. It covers all formats – Live, recorded, BVOD, short-form and SVOD and all devices: TV Set, PC/Laptop, Tablet, Smartphone.

It provides the market with an overview at a very broad level using a combination of TAM data along with data from the establishment survey, and integrating this with a specially commissioned study – The Total Viewing Study.

Working with Nielsen's data science team in Ireland, all of the above data sources are integrated to provide the AV Data Solution. The output provides data across 16 trading demographics and has been widely used by the industry in Ireland to give a broad understanding of viewing trends.

The AV Data Solution was intended to be a short-term interim solution until a more robust solution was put in place, and TAM Ireland have now moved on to the second phase of this plan.

Moving things on: Constructing a broadband panel

In 2019, TAM Ireland increased the panel size to 1,111 households to ensure a minimum reporting sample of 1,000 households daily, and to ensure a high level of representativeness.

Alongside this, a broadband panel is being built as a subset of the TV Panel, using the GTAM Nano meter in combination with a new Streaming Meter, both from Nielsen.

The initial plan is to build a panel of 300 broadband panel homes, and from the outset it has been made mandatory to include all devices in the home. This approach has worked well to date, but due to the

Covid-19 crisis, recruitment was put on hold and data release is delayed. As of mid-2020, 91 homes are reporting into the Broadband panel.

A very steady approach to the build has been taken where recruitment is done from existing TV panel members. In order not to upset the trading currency in any way, the total build is expected to take almost 2 years to complete.

Having this panel in place will enable for the first time the reporting on panellist viewing behaviour across all devices – TV sets, laptops, mobiles, tablets, games consoles - and deliver analysis into how Irish viewers are consuming content from all service providers. It will also give new insights into how the broadcaster OTT players perform alongside the traditional linear TV channels. Crucially, it will also capture digital services such as Netflix, Amazon and YouTube, and provide insights of how these are performing on both TVs and other devices. In recent years, there has been a significant growth in unidentified viewing on TV sets and this development will bring this into the light, and allow clients to understand the full competitive environment.

What's next?

The next phase of TAM Ireland's project and a key focus throughout 2020, will be to agree on capturing and reporting census-level data for the Players' content and commercials. In that same period, an exploration of whether and how return path data can play a role in enhancing the panel data will be carried out, and TAM Ireland is in active discussions with providers on this.

ITALY – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (Auditel) |
| TAM panel size? | 16,000 households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: Video viewed on connected devices using websites and apps are measured with SDKs and single source panel. TV, Connected Devices, Desktop, Mobile and Tablets are measured. |
| Are these data used for trading? | No, only linear data is currently used for trading. |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use/in progress: Census data from broadcaster content is in production and the full deployment of Focal Meters started in early 2020. Working on a local solution. |
| Data sources used? | SDK and single source panel. |
| How is deduplication done? | Working on an internal solution that leverages Focal Meters. |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | 85 % of all major broadcaster platforms are measured. Work in progress for other platforms. |
| Is non-broadcaster content measured? | No |
| Data used for airtime trading? | Currently linear TV only. AdTracking on digital (scheduled to be available by end-2020 and named CUSV project) is in the scope for digital trading. |
| Are these data used for planning? evaluation? trading? | Linear TV data for planning, evaluation and trading. Digital in progress. |



Auditel: Super Panel

Work on the Super Panel project started in 2014, and became a currency in July 2017. The project was created as an answer to the fragmentation observed in various TV markets across the world, and particularly in Italy where, out of more than 200 TV channels, only 32 TV channels were measured on a daily basis back in 2006. This number was up to 219 in 2016 already.

Another serious issue was the lack of capacity to measure TV and video content on devices other than TV sets. To tackle this, Auditel increased its measurement basis from 32 million traditional TV sets to 130 million total viewing devices including OTTs, smartphones and tablets where people are able to stream video and TV content. Auditel took major steps towards hybrid measurement in 2019, as it launched census measurement on browsers and mobile devices.

The Italian approach: Smart Single Source

The project started with an international benchmark to create a tailor-made solution which became the "Italian approach": using all the benefits of a single-source approach without the typical issues of low collaboration level and low acceptance rate. The specificities of the approach involved the following:

- Tripling the panel size to get maximum benefits in terms of data quality and stability: the panel size went from 5,600 to 16,000 households.
- Maximising effectiveness in terms of compliance from the panellists' perspective to create an economically sustainable 'smart single-source' model.
- Having an optimal collaboration with the people in the measured households to ensure a very stable panel.

Answering both the TV content measurement fragmentation and the need of incorporating a new digital measurement solution.

The Super Panel currency

Auditel replaced the traditional people meter with a 'set meter panel' to create the Super Panel Currency. In terms of implementation, the two devices are exactly the same, they measure TV on and off, they are capable of measuring the device providing content on TV, they are equally able to measure the content tuned on TV.

The difference stands with how people are measured. With the people meter, there is a remote control and a traditional display where it is possible to detect who is actually in front of the TV. On the set meter panel, to have an optimal collaboration with the households, the people meter is not installed. This means that the measurement is very accurate for both panels. The two panels are equally balanced and equally representative of the Italian population.

The benefits of the Super Panel are the more granular data and a reduction of the zero ratings on the day of broadcast.

Towards full hybrid measurement

During 2019, Auditel completed SDK implementation on the major broadcasters' properties in two stages. In July, the census measurement on browsers was launched, while it was launched in early December for mobile applications, following a quality control process to ensure the same level of quality across multiple broadcasters. Smart TV SDK integration and census data release is expected in 2020, completing the portfolio of the measured platforms. To maximise the effectiveness of the control process, Auditel has created an internal technical team fully devoted to digital data production.

The data release was complemented by the introduction of a new "Digital Auditel Golden Rule" which sets the basis for the analysis software calculation procedures. The Golden Rule, coming from the experience with the Auditel Super Panel, is meant to ensure that the same analysis made on different

software provides the same results. Data is delivered daily (except Saturday and Sunday), as for the linear TV currency.

From a panel perspective, an initial router meter pilot on 500 households was successfully completed in mid-2019, using Kantar's Focal Meters. This pilot provided all the necessary information about the recruitment and installation processes to set the basis for the Focal Meter deployment on the entire panel that started in January 2020. The major benefits of this solution are the low level of invasiveness which provides a more stable sample, and the coverage of the out-of-home viewing.

Since the beginning of 2020, Auditel has been working on harmonising the broadcasters' metadata catalogue (the so-called Content Library) and on the launch of the "Unique Identifier for Commercials" (the so-called CUSV code) to provide a unique campaign coding system to the market to facilitate the analytic process.

The 2020 roadmap also includes a preliminary version of the "Census Data Profiling" solution to leverage Focal Meter installations.



JAPAN – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | Research company (Video Research Ltd) |
| TAM panel size? | 9,700 households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | No: Currency panel is only for linear TV, but a marketing panel allows for single source multi-screen research for TV, PC, mobile data measurement. |
| Are these data used for trading? | n/a |
| Is TV viewing being measured using hybrid method? | Hybrid method being discussed. <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> |
| Data sources used? | Data derived via SDK from digital content and advertising and match up with panel for profile identification. |
| How is deduplication done? | On an experimental basis on the marketing panel. |
| Is advertising and/or content measured? | Streaming content and advertising can be measured on platforms where SDKs are inserted. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | As above |
| Is non-broadcaster content measured? | Work in progress |
| Data used for airtime trading? | TV currency data |
| Are these data used for planning? evaluation? trading? | Currency panel data is used for all. Single-source multi-screen marketing panel is used for planning. |



Video Research – Japan

Video Research is the sole provider of a TV currency via TV audience measurement in Japan. As Japan's major media research company, its service offerings also include media data for radio, print, OOH and internet (Internet market data is provided via the subsidiary *Video Research Interactive*). In addition to measurement data, it also provides advertising statistics data for each media.

Two types of TV audience measurement data are provided. One is the TV currency data from the home panels, and another is the overlapping use of TV and digital use via the "VRCUBIC" single source panel.

The TV audience measurement service was expanded in March 2020 to include:

- 9600 household in 27 areas.
- Measurement of individual viewing from mechanical people meters in 27 areas.
- Daily data available for the 27 areas.
- Time-shifted viewing data available in the 27 areas.
- National level viewing data from 32 areas (including 5 areas via survey format).

The Japanese market is still dominated by live viewing on TV, but Video Research is reviewing the possibility to include the streaming of major broadcasters' content in the currency.

Launched in 2015, the VRCUBIC single source panel provides marketing data.

- It monitors the activities of 5000 individuals in the Tokyo metropolitan area and 3 other regions, using mechanical people meters (to be expanded to 8000 individuals by the end of 2020).
- For research purposes, a separate SDK is attached to content or commercials to capture data for digital consumption.
- Data collected are integrated with cookie and IDA/AAID from individual monitors.
- A survey may be added to this service.

VRCUBIC does not use fusion, but produces TV and digital data from a single source approach.

Another unique trait of VRCUBIC is that browser data is collected via monitors, and although it is currently only for Android users, data for apps are also collected with a software meter. Video Research has made advances in measuring mobile data, which is often considered difficult to measure in a panel. However, much is being done to ensure close communication with panel members and making the meter light weight and easy to use to facilitate interaction. Video Research is currently in discussion with Nielsen Digital to determine how to deploy the Nielsen Digital Ad Ratings (DAR) in this service with the expansion.

Following GDPR in Europe and CCPA in the U.S, Japan will soon establish laws and guidelines for individual privacy protection. Video Research strictly enforces the use of an opt-in/opt-out method when collecting panel data from TV and digital, and it only uses the collected information for the intended purposes explained upfront.

NORWAY – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | MOC |
| TAM panel size? | 2,500 households (in-home and out of home panels combined) |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: Two separate panels capture in-home and out-of-home viewing with people meters and audio watermarks for channel identification. Online viewing is captured by tracking panel members' devices – router meters identify when online devices are being used in households and to measure viewing levels of non-participating services (SVOD, YouTube, etc.). TV, Connected TV, Connected Devices, Desktop, Mobile and Tablets are measured. |
| Are these data used for trading? | No, only linear data is currently used for trading. |
| Is TV viewing being measured using hybrid method? <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> | Hybrid method in use: Data are available and being used for commercial audiences. |
| Data sources used? | People meter data, router meter data, census data (Kantar SDKs and Kantar Scores tagging to identify content and ads). |
| How is deduplication done? | Currently work in progress to achieve deduplicated reach for content episodes and advertising across platforms (broadcast + online). |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | Broadcaster content on broadcasters' platforms (broadcaster streaming services) is measured, but broadcaster content on TVE 2nd screen apps are not measured in-home. |
| Is non-broadcaster content measured? | Some SVOD (e.g. Netflix, HBO, YouTube) is measured at service level. Both viewing time and reach are measured, but not part of total TVOV (TV and Online Video). Instead it is reported as "Other usage". |
| Data used for airtime trading? | Linear broadcast and linear online. |
| Are these data used for planning? evaluation? trading? | All |



In mid-2016, Kantar Media was awarded the contract to combine TV and online viewing in one measurement, also known as the Norwegian TVOV (TV and Online Video) measurement. Formally in place in January 2018, TVOV ties together the TV and online viewing of Norwegian households on all devices in and out of home, and provides a holistic view of potentially all TV and online video consumption, as well as valuable insights of how viewing is divided between screens and platforms.

Video measurement methodology

The TVOV measurement consists of two panels running in parallel (combined 2,500 households) and one census measurement for online which are combined in one dataset through advanced data integration.

Panel A consists of 3300 individuals (2-79 years) and captures broadcast in-home with people meters. Channel identification is based on Kantar audio watermarking and audio matching technologies. All online devices in a household are tracked in and out of home, and Kantar Focal Meters attached to routers in Wi-Fi homes help identify when devices are being used in households. The Focal Meter also measures non-cooperating players (Netflix, HBO, YouTube etc.) at service level, meaning that both viewing time and reach are measured, but it is not included in TVOV reporting. Viewing on online devices is done using Kantar SDKs and Kantar Scores tagging to identify content and ads. Online viewing in Panel A is calibrated towards census viewing levels using a virtual panel expansion which measures both content and ads.

Panel B consists of 1500 individuals (10-79 years) and has been employed to capture the high levels of out of home (OOH) viewing in Norway, particularly viewing in second homes. The panel deploys Médiamétrie's RateOnAir portable people meter, while channel identification is based on Kantar audio watermarks.

As with every multi-source measurement solution, the process requires a fusion of the different sets of data produced: the calibration of panel A data to census data, and the daily fusion of panel B data to panel A data.

The task for each participating broadcaster is to implement watermarks in the audio feed, to provide asrun logs, content metadata and to implement codes into player, channel and unique content-ID in streams. Commercial metadata is provided by Nielsen Media as an industry standard.

Challenges

As of Q1 2020, deduplicated reach is only achieved for each piece of broadcast and online content or ad separately. There is currently work in progress to achieve deduplicated reach for content episodes and advertising across platforms (broadcast + online).

As it is the case on many other markets, there is a general challenge with the tagging of online players and online content, as well as with keeping up with app/player functionality and design development. There is always some kind of uncertainty whether tagging is correctly implemented.

SWEDEN – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|---|---|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (MMS) |
| TAM panel size? | 3,000 households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | Yes: Through router meter. All device types are measured. |
| Are these data used for trading? | No |
| Is TV viewing being measured using hybrid method? | Hybrid method in use: Data are available and being used for commercial audiences. <i>i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data</i> |
| Data sources used? | Comscore SDK and Kantar Online Panel. |
| How is deduplication done? | Work in progress |
| Is advertising and/or content measured? | Both advertising and content are measured. |
| Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? | All output is measured except SVOD on the broadcaster platforms. Broadcaster output is also measured on some Telco TVE services. |
| Is non-broadcaster content measured? | Yes, telco and publishers (Aftonbladet, Svenska Dagbladet (SvD), Expressen and Dagens Industri (DI)). |
| Data used for airtime trading? | TV and online video currencies (but also other sources for online). |
| Are these data used for planning? evaluation? trading? | All for TV. Evaluation and trading for online video. |



MMS: The integration of measurements towards a total video currency

The aim of Sweden's television and online video JIC, MMS, is to launch and maintain a fully accepted media currency covering all TV and online video viewing on all platforms, screens and in all situations. MMS is working on a Total TV solution, which produced its first figures for ads in early 2017. It later launched the first fused ad level figures in the analysis tool in October 2017, with the objective to launch data on programmes at a later stage. The approach MMS is developing leverages a larger number of separate data sources and involves data fusion across the existing TAM panel, one online panel and one census-level source to deliver Total TV viewing.

A solution built around the TAM panel, census measurement for content and ads as well as online panels

Television audience measurement in Sweden has been carried out by Nielsen since 1993, today using audio matching technology. The panel consists of 3000 households after an expansion done on January 1st 2018, to be able to cope with viewing fragmentation.

The Census measurement of video content using Comscore's SDK was introduced in 2011, and the census measurement of video advertising by Adobe in 2014. In 2017, Comscore took over the ad measurement as well. Using this census-level data, MMS began publishing live+7 days viewing figures of online video advertising for Sweden's television broadcasters in 2014, regardless of the platform on which it was accessed.

In November 2015, MMS introduced the first publisher, Aftonbladet, in the currency and, in the meantime, extended the scope of the measurement to cover other publishers. Since then, three additional publishers have been included.

Also included in the currency are ads through digital ad insertion (DAI) from the telecom's TVE-services. MMS is also working on including the content from the same players. The data collected from these services is added to each channel/site and not reported separately.

MMS is also working closely with YouTube to include them in the measurement.

The census measurement operates on the basis of events, which are created each time a viewer carries out some form of interaction with the video player. Examples of events include starting, stopping or pausing a video. MMS can calculate viewing durations from this data, and publishers provide the organisation with the necessary metadata to identify the content. Online measurement provides reach and frequency figures.

The MMS solution includes the census measurement of online programmatic campaigns. The ultimate goal is for all programmatic campaigns to include a unique code, so that measurement is as granular as possible, and this will hopefully be possible using VAST4.

Total Video Ratings

MMS is working towards a model that brings television, desktop and mobile data from panels together with census-level measurement for programmes and advertising using a data fusion model. The organisation is building the integration hybrid model with GfK, who does not deliver any data but helps with the fusion and modelling processes, as well as with the audit of the different data sources.

The first step of this process was to create profiles to enable work based on online demographics. In order to do this, user-centric data from the online panel is used to build predictive modelling. The prediction model is then applied at cookie-level on census data (provided by Comscore) to try to estimate the probability of a cookie belonging to specific demographic target groups.

As a second step, MMS had to set up an aggregated reach model that combines data sources to correct issues like cookie deletion, device sharing and overlap between platforms. The model follows a two-step routine: mapping cookies to users within each type of platform and then calculate the de-duplicated cross-device reach. A representative online panel with cross-device measurement is being used to estimate the parameters needed for this model. MMS is using the same method to introduce TV as an additional platform, and complete step three of the process, namely the fusion between TV and online data. MMS has been publishing Total-viewing figures for ads this way since 2017.

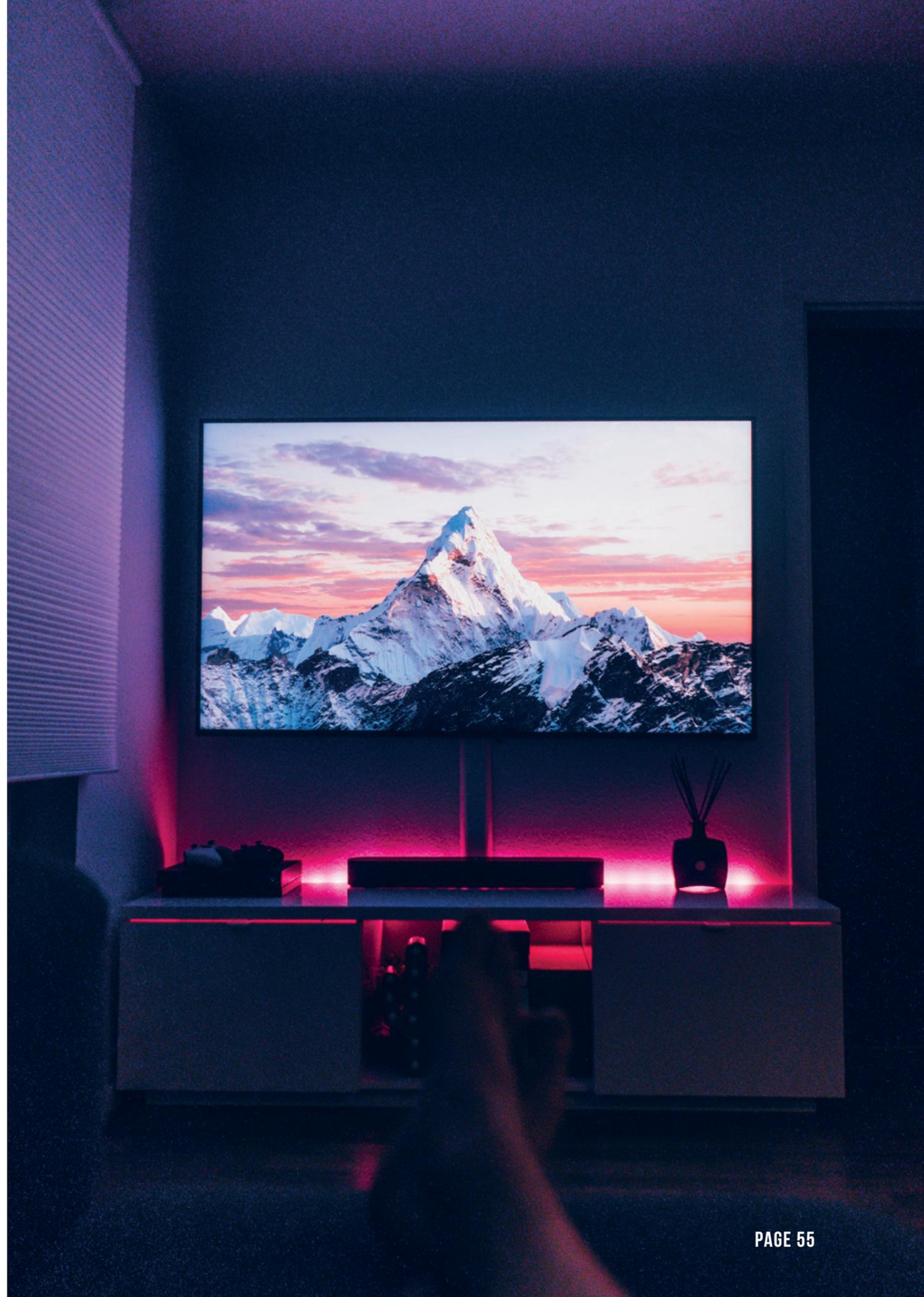
MMS is currently working with GfK to take the measurement solution to a next level creating a virtual panel data with a boosted sample size to be able to calculate reach and frequency on program and site level. The process involves modelling steps as imputation, panellist cloning, cookie deletion correction, weighting and calibration towards census measurement. This boosted panel will then be fused together with the TV-panel in order to get a panel data set with complete measurement across all platforms. The virtual panel model will also replace the current aggregated reach model used for reporting ads.

Challenges

There are several questions and challenges that MMS has been working hard to solve, for example modelling children's viewing and TV viewing as these are not measured in the Kantar online panel, and increasing the number of cross-device panellists in Kantar's online panel to make the prediction model even more efficient. Working towards daily delivery with a high number of sources coming together is also a challenge as well as meeting the needs of the different types of clients in MMS portfolio (publishers, telecommunication companies, etc.) whose perspectives are quite divergent.

A currency?

MMS regards trust in the new currency as critically important, and the new methodology therefore needs to be open and transparent. MMS retains the TV and online currencies, alongside its new hybrid total video measurement – that is not yet a currency. How the market will use the data remains to be seen.



UNITED KINGDOM – TOTAL VIDEO MEASUREMENT – QUICK FACTS

| | |
|--|--|
| Is there a TAM panel system? | Yes |
| Who runs it? | JIC (BARB) |
| TAM panel size? | 5,350 TV and broadband-only households |
| Is viewing of broadcaster output (incl. advertising) measured beyond television sets? | <p>Yes:</p> <p>By combining single-source panel data with device-based census data through a process called Dovetail Fusion:</p> <ol style="list-style-type: none"> 1. BARB's single source panel measures viewing on TV sets (via TV set meters) and PCs and tablets via software meters installed on panellists' PCs and tablets. Router meters are currently being installed into panel homes. 2. BARB collects device-based census data from metadata tags embedded into BVOD services on TV sets, PCs, tablets and smartphones. |

Are these data used for trading? The trading currency is live and timeshifted viewing of television commercials within seven days of broadcast.

Is TV viewing being measured using hybrid method? Hybrid method in use/in progress: Multi-screen viewing data from the Dovetail Fusion process are being released in four stages: (1) Collecting census-level device data for programme viewing in 2015 (2) Multi-screen programme ratings in 2018 (3) Deduplicated programme reach and time spent viewing across TV sets, tablets and PCs in January 2020 (4) Multi-screen BVOD campaign performance via BARB-specified tags for BVOD commercials – in development.

i.e. viewing across linear and non-linear distribution channels for which panel-based measurement is complemented by census-level data

Data sources used? Single source panel data and census data from metadata tags.

How is deduplication done? Panel data is calibrated with the census data which enables deduplicated viewing estimates through a two-stage process:

1. Viewing duration from census data and demographics and reach from the panel data are used to generate calibration targets. The calibration targets are reach and viewing duration/volume for each piece of content in the census data.
2. Within the respondent-level data file viewing levels for each piece of content are adjusted to meet the targets by removing statements if the estimates are above the targets and adding them if they are below.

The calibrated panel (PVX) is produced containing unduplicated viewing data across TV sets, tablets and PCs.

Is advertising and/or content measured? The three stages of Project Dovetail that have launched are for programme viewing. The fourth and final stage, to measure multi-screen BVOD campaign performance, is in development.

Is all broadcaster output on broadcaster platforms measured? What about broadcaster output on other platforms? BARB measures viewing to BARB-reported channels and BVOD services. The tagged BVOD services are: All4, BBC iPlayer, ITV Hub, My5, S4C Clic, Sky Go, STV Player and UKTV Play.

Is non-broadcaster content measured? No

Data used for airtime trading? Trading currency is live and timeshifted viewing of television commercials within seven days of broadcast. BVOD commercials measurement is in development.

Are these data used for planning? evaluation? trading? Only programme data are currently available. These are used by broadcasters and agencies to understand the consumption of content across multiple screens.

UNITED KINGDOM

BARB: Project Dovetail

In the face of fragmenting viewing, BARB, the UK JIC for television audience measurement, has developed its service. In recent years, it has devised techniques to report new ways of watching television, including the use of broadcaster video-on-demand (BVOD) services on tablets, PCs and smartphones; pre-broadcast and non-linear viewing on TV sets; and addressable advertising.

Project Dovetail was established to deliver deduplicated reach of programmes and commercial audiences across multiple screens. The method relies on combining single-source panel data with device-based census data through a process called Dovetail Fusion, run by Kantar.

The multiple-screen viewing data that result from this process are being released in four stages:

1. Collecting census-level device data for programme viewing – in 2015, BARB launched the BVOD services report (formerly known as the TV player report) which includes viewing time via all BARB-reported BVOD services on PCs, tablets and smartphones.
2. Multiple-screen programme ratings – in August 2018, BARB began to report the multiple-screen programme audience figures for all individuals

across four screens: TV sets, tablets, PCs and smartphones. Demographic profiles on TV sets, tablets and PCs can also be analysed.

3. Deduplicated programme reach and time spent viewing – From January 2020, BARB started reporting deduplicated reach and time spent viewing across three screens: TV sets, tablets and PCs. This total three-screen viewing is reported alongside consolidated seven-day TV set viewing, BARB's previous definition of total TV.
4. Multiple-screen BVOD campaign performance – the application of BARB-specified tags for BVOD commercials is in development. In the interim, BARB is launching a beta BVOD campaign planning tool to help agencies and advertisers to plan advertising campaigns across BARB-reported broadcasters' linear channels and BVOD services.

A single source panel for viewing data

BARB operates a panel of 5,350 television and broadband-only households (over 12,000 individuals aged 4+) which represents television viewing across the UK. Broadcast viewing is measured with Kantar's TV set meter, which uses audio matching and watermarking technologies. Kantar's software

meters are installed on panellists' PCs and tablets to measure BVOD viewing on these devices, although these are being phased out as BARB deploys a router meter in panel homes. Panellists use handsets to register when they are in front of a TV set, to ensure that the number and identity of people watching is recorded. While the software meter has been used by panel members to register who is watching on PCs and tablets, the process of assigning viewing on other devices to panel members will change as BARB deploys the router meter.

Census-level data from metadata tags

BARB also collects device-based census data whenever anyone in the UK watches a BVOD service on PC, tablet or smartphone, as well as collecting census data for some BVOD service viewing on TV sets. Kantar works with broadcasters to embed software code into their BVOD services across platforms, known as tagging. Verification that the census data represent actual viewing is essential and so the tagging implementation is independently audited by ABC (Audit Bureau of Circulations).

Whenever someone in the UK watches a programme through a tagged BVOD service, the embedded code generate data showing what has been watched and, to the second, for how long. These data show the number of devices used to watch programmes, but are not people-based figures. BARB reports these on-demand and live streamed census data in the BVOD services report (formerly known as the TV Player report, launched in 2015).

The multiple-screen viewing figures released in the first stage of Project Dovetail show that viewing on devices adds approximately 1.5% to TV set viewing on average, although this varies by genre and programme. For example, some episodes of ITV's Love Island in 2019 saw devices add up to 32% to TV set viewing.

Router meters

BARB has commissioned Kantar to install its router meters in panel homes; the installation process is underway, with initial data expected in 2021.

Router meters are attached to the broadband routers in panel homes and are designed to track streaming activity by any member of the household on any device, with their consent. They will enable BARB to deliver a number of service improvements:

- To distinguish whether post-broadcast viewing was done through a tagged BVOD service or via playback of a PVR recording (currently, BARB can only make this distinction in panel homes with Sky).
- To measure panellists' viewing on smartphones.
- To provide greater insight into unidentified viewing (TV set viewing that BARB cannot identify, which accounts for over 20% of total TV set use). A significant portion of unidentified viewing comprises of viewing to SVOD and online video services; router meters will facilitate the reporting of aggregate-level viewing of these services.

Measuring other types of viewing

There are questions about whether BARB can and should measure viewing to SVOD services like Netflix and Amazon Prime, or online video services like YouTube and Facebook.

In an industry consultation conducted by BARB, advertisers and agencies stressed the importance of comparable metrics to TV (in terms of duration, viewability and verification); a brand-safe editorial context; and equivalent editorial responsibilities.

The EU Audio-Visual Media Services Directive (AVMSD), which underpins the regulatory framework in the UK and in EU member states, determines TV channels and VOD services to be under the editorial responsibility of the media service provider, whereas video-sharing platforms are not deemed to have editorial oversight. BARB's definition of media services that are eligible to be measured is those with

editorial responsibility: any TV channel or on-demand service that is regulated by Ofcom or is regulated to an equivalent standard in another country (i.e. also underpinned by the EU AVMSD).

SVOD services are therefore eligible for measurement. BARB can report programme-level viewing to these services with their involvement, using the same technology it uses to report non-linear viewing. Router meters will deliver insight into viewing to those SVOD services that choose not to be reported. BARB has specified to research agencies that programme-level reporting of SVOD services is an essential requirement.

Other service improvements: Integration with IPA TouchPoints

From March 2020, BARB users have been able to use target audiences available in IPA TouchPoints after a fusion between the two datasets was conducted. The IPA TouchPoints data provide a rich range of new consumer profiling information and an understanding of how consumers use other media channels. Agencies and broadcasters have welcomed the opportunity to use the fused data for implementational TV campaign planning.

UNITED STATES

TV Measurement in the US

TV Measurement in the U.S. is in the midst of significant changes that are being driven by fragmented viewing behaviour of consumers across multiple viewing devices and platforms, combined with new forms of data that come from each new distribution platform and partner. There is a growing availability of second-by-second tuning data from both smart TVs and set top boxes (STBs). Additionally, TV networks have all become digital publishers who have proprietary site and app data across all their digital properties, and they receive data back from the AVOD and SVOD platforms on which they distribute their content. However, there is no standardisation in how all these data are collected or reported.

A fragmented market

There is a growing desire among TV networks, agencies and marketers for a verified third-party or neutral JIC-style measurement system that captures and deduplicates content and ads from all forms of TV and premium video. This include linear and time-shifted TV, VOD, addressable TV and all forms of digital video delivered via the web or apps on computers, phones and smart TVs. However, since the US market does not employ joint industry groups due to anti-trust concerns, coordinated efforts to achieve the ideal measurement system are challenging. The efforts are left to individual vendors, who receive direction from their clients, with some guidance from the Media Rating Council and/or some collaboration with industry trade bodies, such as the 4A's, the WFA/ANA, the Video Advertising Bureau (VAB), the IAB, the Advertising Research Foundation (ARF) and the Coalition for Innovative Media Measurement (CIMM).

As such, there are a variety of approaches, each with differing levels of coverage, and it is challenging for the industry to coalesce around a single new approach. This has led to continued reliance on Nielsen for linear and time-shifted ratings, since they have been the incumbent provider of TV ratings for decades,

and they continue to work to add in data from other platforms. However, the networks do not all want to implement Nielsen's SDKs in all their digital apps, primarily since the apps are cumbersome to install and can negatively impact consumer experience and also add significant cost to Nielsen's fees. Additionally, some of the new SVOD companies, who do not yet rely on advertising revenue (such as Netflix and Amazon Prime Video) do not participate in third-party measurement, and only provide data to their content partners for their specific content. Nielsen has made progress measuring some of this content using a combination of fingerprinting technology to identify the content and router technology to identify the source of the content.

The result of all these fragmented approaches to measurement is that each TV network group has created their own proprietary approach to providing cross-media measurement for both content and ads (such as NBCU's CFlight). Each has their method of combining Nielsen data for linear and time-shifted viewing with the VOD and addressable data they get from MVPD partners. This is additionally combined with their own proprietary data from their sites and apps and additional data from distributing their content on apps from other AVOD aggregators, such as YouTube, Pluto TV, Facebook, Tubi TV and more. However, these approaches have not been created to be comparable, and there is not a lot of transparency around comparing the methodologies.

Approaches to cross-platform and total TV measurement

Nielsen still provides the traditional panel-based ratings service upon which the majority of national and local TV advertising is traded. They use a variety of meters from people meters to set meters to portable people meters that also capture out-of-home TV viewing. However, they do not measure ads, but rather average all of the minutes in a program with a preponderance of ads. These are called the



C3 Rating, meaning the Commercial Rating with 3 days of time-shifted viewing); or the C7 Rating (with seven days of time-shifted viewing). However, a new technical development which is "breaking" this metric is dynamic ad insertion (DAI) on national network inventory (both via MVPDs and through new Smart TV ventures on broadcast networks such as those from Nielsen and [Project O.A.R.](#)). When ads are replaced, Nielsen cannot separate the addressable from the non-addressable spots in their national ratings system, since they do not measure spots. This is creating the need for second-by-second spot measurement.

Comscore provides second-by-second measurement and is gaining ground in using STB data to create local market TV measurement, based on household impressions against audience segments beyond simple demographics. However, they also have not been able to completely solve cross-platform measurement, in that the networks have not universally implemented their SDKs. Comscore also

has a digital panel to measure web behaviour and a Total Home Panel that uses a router meter to measure app usage, but they can only identify the source of the app and not the titles of the video content playing on SVOD apps.

Additionally, there are a number of other approaches emerging in the U.S. to measure complete cross-platform TV/Video measurement of all forms of linear TV, VOD and addressable TV, along with digital video and all forms of OTT. Companies such as VideoAmp and 605 are making progress combining smart TV and STB data, but they still have not been able to include data on who is viewing and cannot measure co-viewing or out-of-home measurement. There has been a big increase in the number of companies using smart TV and STB data to conduct attribution analysis, which can divide households based on exposure to an ad and compare both groups against sales or against other performance indicators for advertisers, such as site visits.

In addition, there are two new in-home TV measurement panels at various stages of development. One is called TVision and uses a combination of automatic content recognition (ACR) on a tablet next to the main TV, along with facial recognition technology that measures eyes on the screen. The other venture is a new panel called PersoniCore which expect to launch a Pilot Test in 2020. PersoniCore deploys a meter-based technology with 8 HDMI ports for all the TV plug-ins. It uses image recognition software to identify content and ads and is matched to schedule information for program and ad names. They can measure content and ads for all types of linear and time-shifted content, including OTT apps, gaming and even product placement in both TV and OTT. This panel hopes to provide a smaller and less expensive calibration panel for data providers who are not permitted to license Nielsen data.

Finally, there are a number of industry initiatives currently seeking to accelerate a solution to these challenges. The WFA/ANA has launched a marketer-driven framework for understanding deduplicated reach across all media channels, including large digital players as well as TV. The ANA is planning the U.S. Pilot Test, once a design for TV measurement has been agreed upon. CIMM launched an initiative called the TV Data Interoperability and ID Resolution Design Initiative, which grew from a series of Future of Television (FoT) Workshops with senior executives in the TV/premium video industry that were run by consulting firm EY. This is an effort to normalise data across all TV/premium video platforms so that it will be interoperable and can be deduplicated using various solutions for identity resolution. The new system will need to be combined with accurate program and ad names and potentially with a panel to provide data on who is in front of the TV set and co-viewing. Additionally, the industry group that measures all forms of out-of-home advertising, GeoPath, is exploring new approaches to measuring

out-of-home TV viewing. The combination of these initiatives will hopefully create agreement around a plan for the industry to follow in the coming years³.

³ For an overview and comparison of media attribution providers and their services in the US, visit www.cimm-us.org and download the latest TV Attribution Guide





NIELSEN: THE PROVIDER OF TELEVISION RATINGS IN THE US

Nielsen provides television ratings services in the US, with electronic measurement, nationally and across all local markets. Broadcasters and cable networks use the Nielsen television audience ratings as the primary currency to establish the value of their airtime and more effectively schedule and promote their programming. Advertisers use this information to plan television advertising campaigns, evaluate the effectiveness of their commercial messages and negotiate advertising rates.

The most commonly used metric for national linear television advertising is the Average Commercial Minute rating (ACM), introduced and agreed upon by the industry in 2007.

This standardised measure for commercials averages all minutes of the program that contain national commercials from the live telecast, via playback or on-demand. The ACM is also referred to as "C3" or "C7" which includes the live day plus 3 or 7 days of viewing. However, media companies, advertisers and agencies can negotiate deals beyond Live +3 or +7 days and for this Nielsen provides additional windows of crediting for the ACM ratings out to 35 days which enables clients to evaluate opportunities beyond traditional viewing intervals.

A major enhancement to the linear television currency was the inclusion of Out Of Home (OOH) ratings as a standalone service, introduced in April 2017, which is particularly important for networks that distribute

sports and news content. Nielsen is currently working towards the inclusion of OOH ratings into the existing national currency.

Additionally, Digital in TV Ratings (DTRV), was introduced in October 2014 and accounts for linear TV viewing occurring on desktop and mobile devices for participating programming sources. This is the first solution to receive accreditation from the Media Rating Council for its contribution to TV audience measurement for programming viewed on computers and mobile devices. DTRV is included in the C3/7 currency, and is implemented on both TV network and provider apps using a census-based SDK methodology.

Separate and distinct from traditional linear TV ratings, Nielsen also offers measurement of VOD content once the linear advertisements have been removed via its VOD Content Ratings Service launched in December 2006. In addition, Nielsen began offering measurement of SVOD content in August 2017, and currently includes Netflix and Amazon Prime (expanding to Disney+ and Hulu in September 2020) as syndicated services. These measurement services are based on the same panel methodology as traditional TV ratings and include viewing through TV sets.

The two areas of rapid change that are enveloping the US media landscape are the rise of streaming consumption through TV sets and the rise in technologies available to insert addressable ads on linear TV platforms. To address the rise in streaming TV usage, Nielsen is in the process of introducing a new "Streaming Meter" on its national TV panel households. The Streaming Meter identifies when streaming takes place on the TV and from which app. This will allow Nielsen to create total ratings for streaming services such as Netflix, Hulu and YouTube.

To address the rise of technologies available to insert addressable ads on linear TV, Nielsen is in the process of building an infrastructure capable of measuring addressable ads using a combination of big data inputs (return path data, smart TV ACR technology) and TV panel data.



COMSCORE: OVERVIEW OF TV & CROSS-MEDIA MEASUREMENT SERVICES IN THE US

The convergence of TV and digital has upended the media ecosystem, creating both challenges and opportunities when it comes to measuring audiences and advertising across platforms that Comscore is ideally suited to address. As TV content extends across platforms and digital media consumption continues to grow, media buyers and sellers rely on Comscore to plan, transact, and evaluate media across platforms with confidence.

For TV, Comscore's solutions provide television buyers and sellers in the US with precise, massive-scale measurement of national television programming and advertising. For video, Comscore delivers a total view of consumer digital video consumption across desktops, smartphones, tablets and OTT devices. Premium video content and advertising can be strategically planned, bought and sold across platforms using digital-exclusive and TV-comparable GRP metrics available from Comscore.

The **TV Essentials (TVE)** and **StationView Essentials (SVE)** products measure and report linear TV viewership using second-by-second intelligence from its measurement footprint of approx. 60 million TVs in approx. 30 million U.S. households (to be expanded to around 75 million TVs in around 40 million U.S. households in early 2021). TV Essentials provides national measurement across all U.S. television households, while StationView Essentials measures

television stations and selected cable networks in all local U.S. television markets.

Comscore's projection system takes the viewership data from 30 million households and uses the data to make estimates for TV viewership in the entire U.S. This means that Comscore receives data from more than 25% of households on average at the national level (this ratio varies by market, but over 50 markets have a ratio equal to or better than one in four households). Comscore's reporting provides the marketplace with a level of granularity and stability that is unmatched in the industry. By integrating TV viewing information with consumer segmentation systems and syndicated consumer behavioral information from its data providers such as IRI, Experian and Simmons, Comscore empowers stakeholders – including agencies, advertisers and television networks and stations – to direct the right message at the right audience, providing buyers and sellers with a deeper understanding of the true value of their television viewing audience.

OnDemand Essentials provides precise census-level measurement of video on-demand (VOD) programming. Leveraging VOD consumption information from more than 115 million TV screens and nearly every multichannel video programming distributor (MVPD) across the U.S., OnDemand Essentials allows TV networks, MVPDs and movie studios to make more timely and accurate programming and marketing decisions.

OTT Intelligence, powered by Comscore's Total Home Panel using meters attached to household routers, reports on video viewing data collected from digital devices that are connected to televisions and streaming services – including Netflix, Hulu, Disney+, Prime Video and Twitch – and streaming directly onto the TV screen. OTT Intelligence provides clients with data on the OTT market size, its growth, the competitive landscape, loyalty of users to specific services, opportunities to reach hard-to-reach audiences (such as Netflix viewers), household profiles of OTT users and OTT device usage by service.

Video Metrix® Multi-Platform delivers a total view of consumer digital video consumption across desktops, smartphones, tablets and OTT devices. This provides insight into audience size, reach, engagement and demographic composition across digital content and ads. In addition, Video Metrix Multi-Platform measures audiences and viewership on distributed platforms, including YouTube and its Partner Program.

Comscore Campaign Ratings™* (CCR) is designed to provide in-flight measurement of cross-platform campaign delivery across TV, over-the-top (OTT), desktop and mobile. Powered by Comscore's massive data scale and pioneering person-level measurement methodologies, Comscore Campaign Ratings aims to provide marketers and media companies with a trusted third-party currency for evaluating campaign delivery across platforms, including co-viewing lifts and unduplicated reach, frequency and GRPs for key demographics.

LiveRamp Save Haven Offering: With the cookie-based approach to measurement being on its way out, it stands to reason that the sell-side and the buy-side might seek an alternative approach to determining ROI by comparing their first-party datasets. In order for these comparisons to work, they need to ensure that their shared first-party data does not include personally identifiable information and that it retains its value as proprietary information. This is where concepts like "data clean room" comes into play. A data clean room is a safe space that aggregates multiple first-party datasets and reports to each contributor only information on how that contributor's data interacts with that of other parties. In the past, data clean rooms have had high setup costs, required an advertiser to link with multiple data platforms separately, and have not supported real collaborative interactions between partners to accelerate the discovery of key audience insights.

However, this is where the advantage of working with a neutral third-party like Comscore comes in. Comscore recently announced a partnership with LiveRamp, which names Comscore as the preferred data provider for LiveRamp's Safe Haven offering.

LiveRamp's Safe Haven goes beyond traditional clean rooms to offer a neutral and secure environment based on a framework of data governance for privacy-first data collaboration that drives performance optimization, campaign incrementality, and richer audience understanding. For advertisers, this will enable data collaboration and custom analytics, and is available today on a brand-by-brand permission basis.





PART 03:
**AN OVERVIEW OF THE
VIDEO AUDIENCE
MEASUREMENT
SERVICES PROVIDED
BY LEADING
RESEARCH AND
MEASUREMENT
COMPANIES**



Comscore is a trusted partner for planning, transacting and evaluating media across platforms. With transformative data science and vast audience insights across digital, linear TV, over-the-top (OTT) and theatrical viewership, we are a powerful third-party source for reliable measurement of cross-platform audiences.

Media disruption has upended the way marketers and media companies connect with audiences to drive growth. Comscore measures such disruption, among other things. As a pioneering audience measurement company, Comscore was founded with a mission to solve the most complex challenges in the media ecosystem. Today, those challenges include accurately measuring audiences in an increasingly cross-platform world which is a major focus for Comscore.

Operating in more than 29 countries across the world, Comscore brings trusted data to clients across the advertising ecosystem.

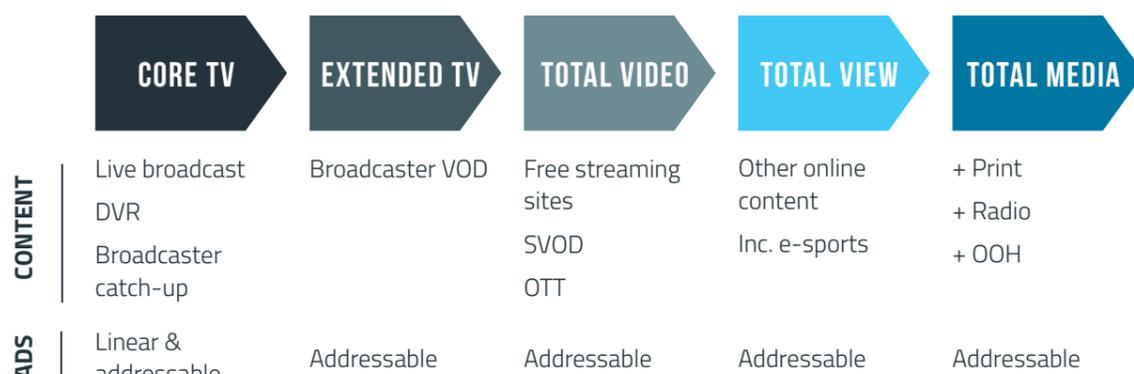
Cross-Media Audience Measurement projects

Cross Media Audience Measurement (CMAM) provides solutions for International markets, in cooperation with JICs and partners, to cover the expanding scope required by advertisers.

The foundational element is validated census data of stream plays collected via Comscore's streaming tag inserted in broadcasters' players. This forms the basis to collect digital viewing data of TV programmes and TV channels (extended TV data). Via labels, the broadcaster provides metadata to identify and classify the streams e.g. link to the original TV programme or whether the stream is offered online only.

The connection to Television Audience Measurement (TAM) household panel members happens via a meter, such as the Kantar Focal Meter (router), that identifies devices in the household. The devices of the TAM panel members are known to the panel management and Comscore provides the census data of the household devices back to Kantar or the

FIGURE 01: COMSCORE CROSS-MEDIA AUDIENCE MEASUREMENT (CMAM) - OVERVIEW



Source: Comscore, 2020.

JIC, together with aggregated census data at the level of TV channel, TV programme and TV episode. This allows Kantar or the JIC to build a model where they can integrate data to produce daily audience data and report the results in a deduplicated way with the linear TV data. Countries where this methodology is applied are Italy, Canada and Switzerland.

In other countries, the link to devices of panel members to census measurements happens via a so-called virtual meter. Similarly, Comscore provides the census data of the household devices, together with (aggregated) census data at the level of TV channel, TV programme and TV episode. Countries where this methodology is applied are Spain, Sweden, Netherlands and Turkey.

The census data for the households or panellists can be provided by Comscore to a project partner or to a JIC using a privacy-preserving mechanism like double-blind data exchange to keep the identity of panellists undisclosed and stay just with the company managing the panel.

CMAM has different phases (see figure 02). Starting with census only digital TV viewing, it can be expanded to use Census Based Panel (CBP) and Return Path

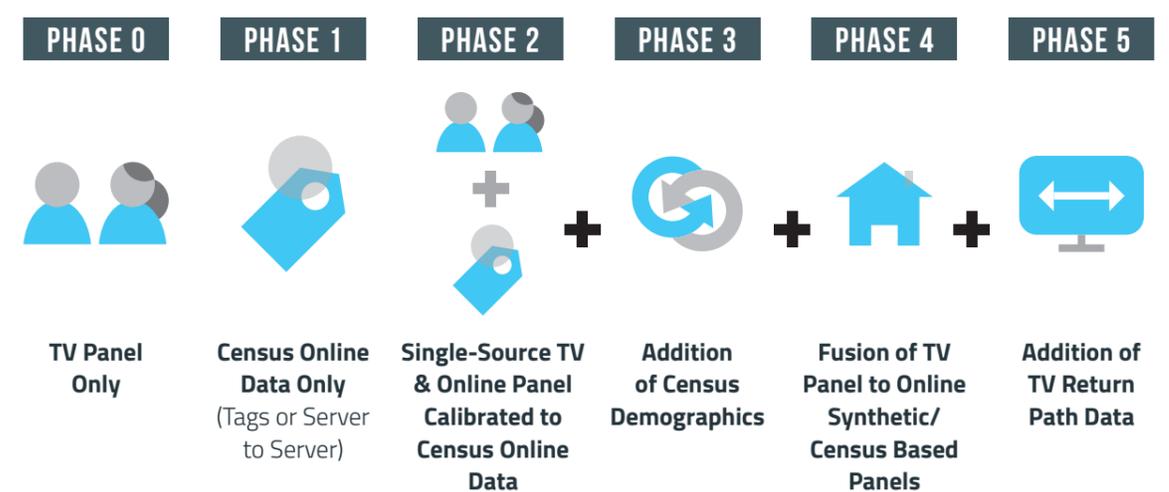
Data (RPD), as the reporting scope covered above broadens.

Another service offered internationally by Comscore is the **Video Metrix® Multi-Platform** which delivers a total view of consumer digital video consumption across desktops, smartphones, tablets and OTT devices. It offers deduplicated, person-level video audience measurement across digital content and ads, providing insight into audience size, reach, engagement and demographic composition across digital content and ads. In addition, the Video Metrix Multi-Platform measures audiences and viewership on distributed platforms, including YouTube and its Partner Program.

Evolving Standards

Comscore closely follows and participates in industry initiatives around standardisation of cross-media measurement in a cookie-less and more privacy-focused world. Comscore adapts its methodologies as appropriate.

FIGURE 02: CMAM PHASES



Source: Comscore, 2020.



How GfK unlocks value from audience measurement and provides valuable insights to the players in the media ecosystem who need to understand TV and media consumption patterns? GfK firmly believes that one size does not fit all, which is why multiple solutions have been developed.

Approach to hybrid measurement

The aim of our measurement is to follow the user on all devices for a 360-degree understanding of viewing consumption. To deliver it, we have developed a modular approach that measures viewing behaviour across all devices reported in our panels. All these measurements are combined in our central One Media Platform, enriched and, if necessary, supplemented with census data and/or third-party data.

TV data collected via audio tracking is melded with digital data from an in-home router measurement and/or digital on-device measurement and with digital video census data sets. In an ideal scenario, this happens in a single source panel, but we have also developed fusion approaches to deliver integrated total video ratings based on a hybrid panel approach.

To include the growing longtail, we have developed methods to generate viewing insights based on qualified census data and/or return path data to enrich our panels.

All these solutions are modular so we can guarantee a high-quality currency measurement for total video ratings for each market adjusted to the local conditions and needs.

Different approaches

We use different approaches ranging from the traditional - where one research agency wins the tender and collects, processes and reports all the data - to the scenario where an agency provides some of the data; and finally, to where we only connect the data. GfK has extensive experience across the entire spectrum (see figure 04).

Key to all of our contracts are common principles: transparency of methodology, flexibility in approach and thinking, and adaptability to create a solution that works for each unique market. This increasingly means collaboration with other research agencies, data providers and other third-parties, an approach that has worked well for us.

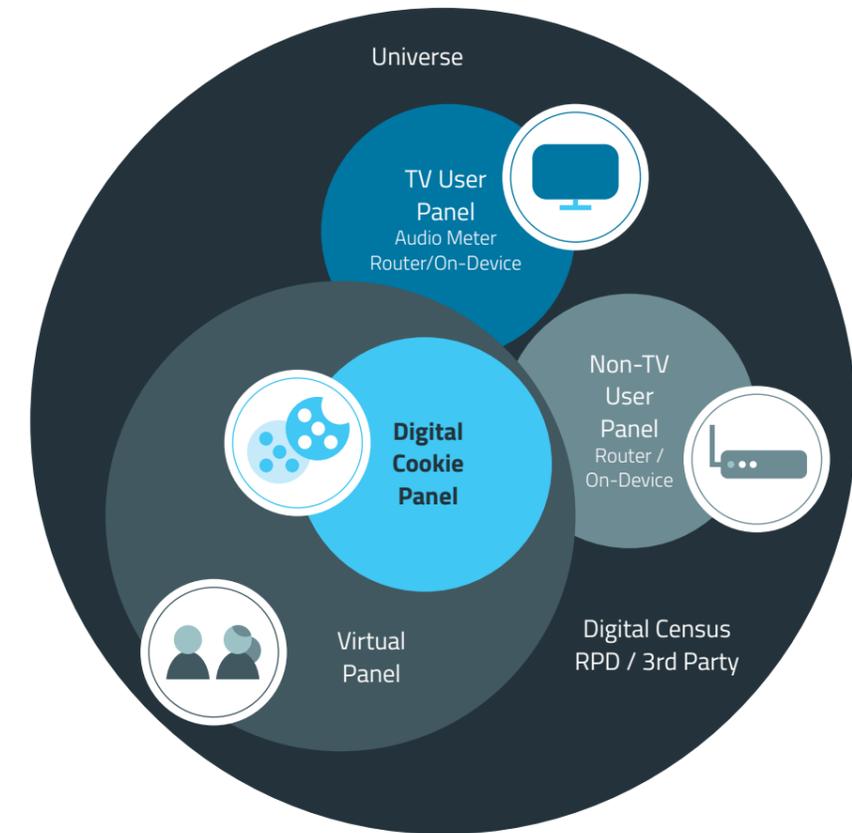
Data integration

In instances where we do not own any of the data, there are a number of agencies collaborating in a data integration approach. We start with a TV measurement panel that covers content and ads, then we add census measurement that covers all devices and big screens. The next ingredient is an online panel with cross-device measurement. And finally, we integrate all these data assets with the help of advanced data science techniques.

We use this approach, for example, in our data integration project in Sweden, where three research agencies provide data assets and GfK performs the data integration work to deliver an integrated streaming and linear audience reporting. The interesting aspect of this approach is that the TV and online panels are completely independent. During the first step, we expand the online panel with virtual panellists from census data applying data science solutions, and in the second stage, we fuse the linear and the virtual panel data. The outcome is the integrated dataset that includes both linear and streaming usage.

In instances where we provide part of the data, for example TAM in Germany, we work with third parties who provide the online panel to complement our cross-media panel, as well as the German JIC AGF and

FIGURE 03: HYBRID PANEL APPROACH



Source: © GfK 2020

online platforms. In this scenario, one of our key skills comes into play - data integration - to capture the digital viewing of TV and video.

Bringing a fully integrated audience measurement solution to Singapore

GfK has run a full audience measurement solution in Singapore - SG-TAM - for Singapore's Infocomm Media Development Authority (IMDA) since 2016. Acting as a total video currency, it combines live TV viewing, catch-up TV and streaming TV content to deliver fully integrated, deduplicated video ratings. The advantage in Singapore is that we have a single-source element in our panel.

GfK delivers integrated linear and non-linear TV audience figures - regardless of the device used for

viewing - and reports using standard metrics. That includes:

- Live viewing.
- Catch up for up to 28 days on 200+ channels.
- Streaming TV content on partner broadcaster players.

Although traditional live TV viewing still dominates in Singapore, streaming services are growing in popularity. These are tracked using a dedicated digital panel with passive meters on smartphones, tablets and PCs (see figure 05 for an illustration of the SG-TAM panel setup).

As more viewers choose to watch online, one key objective is to track trends in live TV viewing, and to understand if viewers are migrating online for the same content.

This form of cross-media measurement for video specifically is attracting a lot of industry attention at present. Much of it is focused on the WFA global initiative, announced in December 2019, which aims to set standards for cross-media measurement and to unlock its potential for the entire media ecosystem.

For our part, we can show if that same content is attracting new online viewers when streamed, and if so, evaluate the incremental reach – including analysing who is viewing via streamed video content. We are also able to assess the types of audiences that view on the different platforms.

This means we can answer some of our clients' key questions such as:

- How often do people use their smartphones while watching TV?
- When are they doing this?
- Are there differences in the population in terms of this activity?

Beyond Video...Total Media Measurement

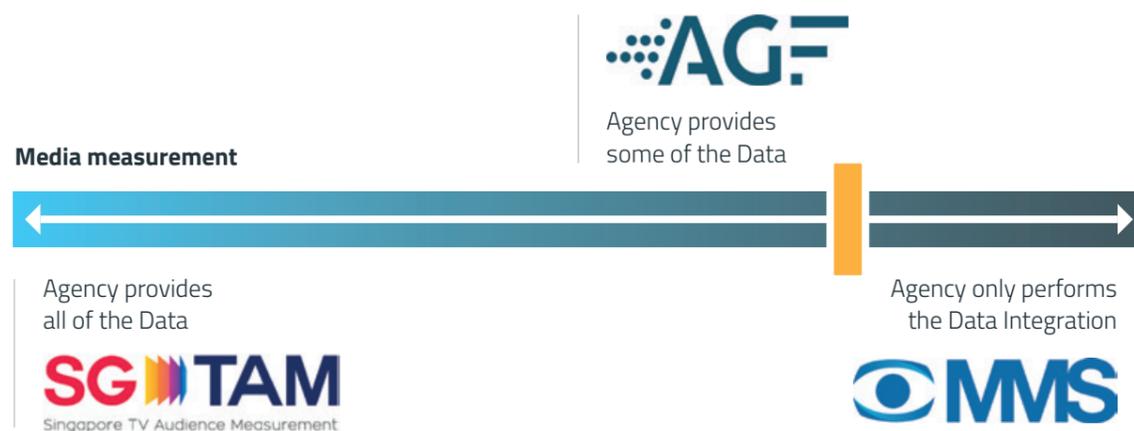
Ultimately, we aim for a comprehensive Total Media Measurement where we track analogue and digital consumption viewing, listening and reading – online and offline. Then we add consumers' interests,

product use, advertising attention and more for all domains measured through our consumer surveys. To this we add the holy grail of actual sales data, directly linking media consumption with purchase behaviour. This approach supports the growth of media businesses by providing a stable transition of the existing media currencies into a smart, relevant and trusted cross-media solution.

We combine panel and census measurement using our Audience Ascription Modelling (AAM). AAM provides a dataset for analysis and reporting large enough to cover any digital use by integrating census and panel data – but importantly, it also retains the special value of each dataset in the final output. That is, keeping both the in-depth information about the profiles from the panel as well as having reliable information on the longtail by closing any panel measurement gaps through using the huge numbers of the census measurement. The enriched cookies from the census data can flow back into programmatic systems to optimize targeting processes.

In other words, we put digital first and combine our state-of-the-art media audience measurement with an open platform ready for integration with external data sources and systems.

FIGURE 04: ONE SIZE DOESN'T FIT ALL

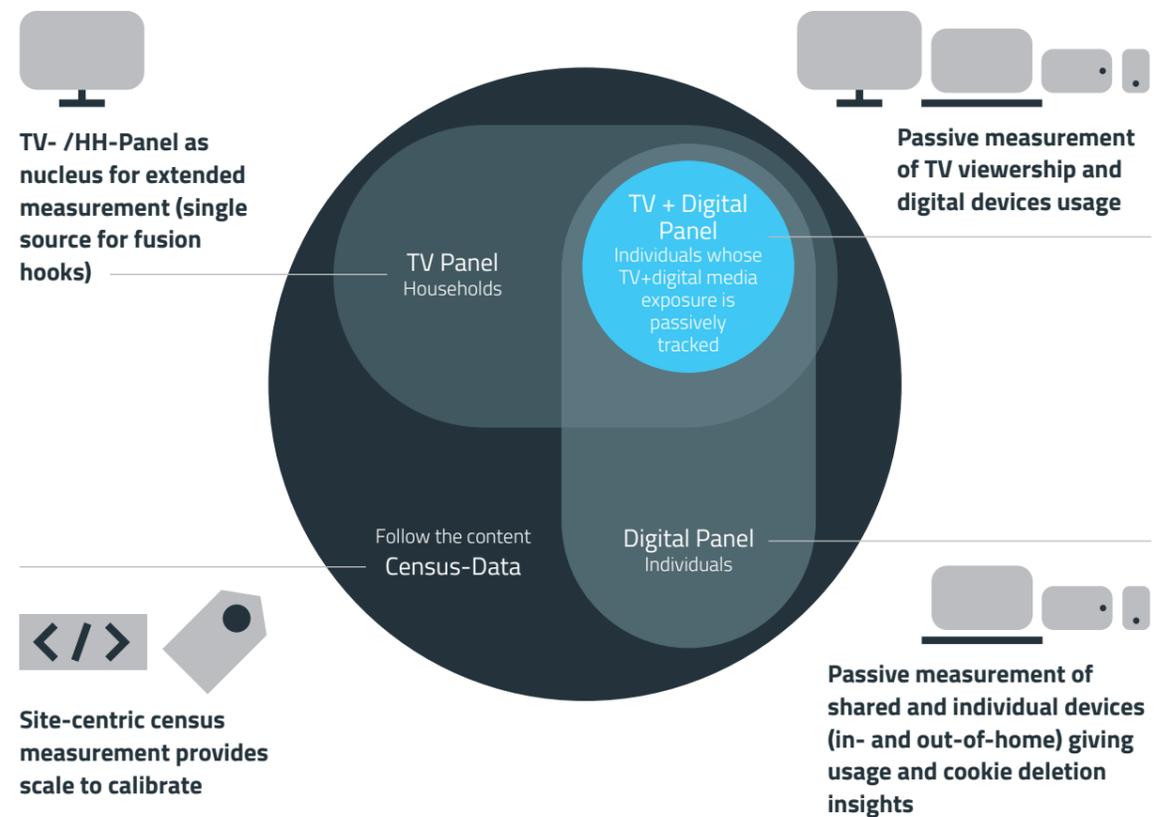


Source: © GfK 2020

Conclusion

We want to embrace differences in approaches while recognising commonality and have a collaborative mindset to give the users of the data what they want – a single, integrated system for planning and buying – and one that can handle programmatic data. At GfK, this is our key focus for the future of audience measurement, and we are building technology platforms to deliver not only integrated video and digital data, but which are also prepared for a future where all media data – TV, radio, digital, print media – will come together.

FIGURE 05: SG-TAM: THE PANEL



Source: © GfK 2020



Gemius is an international research and technology company providing data and advanced tools for digital and traditional marketing activities such as web analytics, online campaign management and ad serving. The company offers comprehensive cross-media solutions for marketers, advertising agencies, publishers and e-commerce. Gemius has been on the market since 1999. It is a member of IAB Europe and I-COM Global.

In 2018, Gemius launched the first single-source cross-media study in Poland covering advertising campaigns on TV and internet, including walled garden ecosystems. One year later, Gemius extended its research to radio measurement. In 2020, together with The Polish Internet Research, Gemius prepared the implementation of an innovative single-source solution that enables passive measurement of media consumption across TV, radio and internet.

Gemius products and methodology have been recognised by the IAB Europe Research Awards. Since 2015, Gemius has been awarded for the Behavioural Panel Synthesis methodology, the Overnight methodology and the gemiusAdReal market intelligence tool. In 2019, the project *True Single Source: gemiusPostBuy & gemiusAdReal*, brought Gemius the fourth statuette. In 2020, Gemius received the IAB Research Awards trophy for its single source solution that provides data about media consumption and post-campaign ad exposure on TV, radio and internet.

gemiusAdReal: Enabling cross-media measurement

gemiusAdReal is a cross-media advertising research study covering traditional (TV, radio) and digital (PC, mobile) channels, conducted with the use of a proprietary single-source study panel method. The study enables its users to check total net reach for advertising campaigns on television, radio and online (cross-media coverage).

It is a passive research based on a panel, i.e. a representative group of the Internet users who have a research software installed on smartphones distributed by Gemius (mobile – hardware panel) or in browsers (PC – software panel). The software measures the media behaviour of panellists focusing on exposures to audible-offline and all-online advertising. Data collected in the study is categorised and processed in order to extrapolate an overall picture of the cross-media advertising.

Currently, gemiusAdReal data is available for ads served on PC platforms in France, Germany, Poland, Romania, Russia, Turkey, Ukraine, Hungary and Latvia while measurement for mobile platform and TV / radio (cross-device) is available in Poland, Germany (PC, mobile, TV) and Turkey (PC, mobile). Radio data is produced but not yet officially published in Poland.

gemiusAdReal process

The gemiusAdReal data production process includes four main stages:

(1) Panel recruitment

The single source panel is the primary source of data for audience duplication and total net reach of the campaigns analysed in gemiusAdReal. This panel is currently composed of approximately 1500 panellists in Germany, 2800 in Poland and 550 in Turkey (as of August-2020) who all have smartphones (hardware-based panel) with a meter installed on the operating system. In the recruitment process, panellists are also obliged to install a meter on their PCs if they use them (above 90% of hardware panellists use PCs, so they also participate in the software panel).

Gemius also owns an independent software panel which increases the precision of online data. The recruitment process ensures that panellists are a representative sample of the population of the internet users in a given country.

(2) Data collection (recognition of ads)

The data collection method depends on the used data source (panel) and the type of medium where the campaign is carried out.

- Contact with television and radio ads is measured on the mobile panel with use of sound matching, whereas reporting is available for top 35 TV channels (3 days' time-shift) in Germany and for top 37 TV channels (7 days' time-shift) in Poland;
- Contact with ads on digital platforms is measured on PC web browsers and in mobile apps (web browser, Facebook, YouTube, Instagram).

Sound matching (TV and radio)

The sound matching technology is used by some research companies for the purpose of studying media consumption. In Gemius' hardware panel, the meter installed on panellists' smartphone makes it possible to collect background sound samples without using a dedicated measurement app. The collected sound samples are displayed in a spectrogram showing changes in sound frequency as marked points which will be coded as fingerprints.

The data collected are compared with the reference database of fingerprints for a particular media which Gemius updates on an on-going basis, and which makes it possible to determine whether a panellist has watched a given TV channel. Sound fingerprints collected from panellists are compared with the available reference media database up to 7 days back to take into account time-shifted media consumption.

In practice, this means that a sound source may be identified as television or radio if the advertisement was heard, and if a given contact with an advertisement was not assigned to its playback on a PC or mobile device after the deduplication process.

(3) Categorisation of ads

Creatives recognised via the TV or radio reference signal, or recognised and downloaded by the browser extension or from within a mobile app, receive an automatic or manual description by industry and advertiser>brand>product.

(4) Data processing and publication

In the last stage of the process, a virtual version of the panel is created with a high number of virtual panellists with equal weight. This 'constant panel' solves rotation problems and gives equal and stable weights to all panellists.

Thanks to this innovative methodology, it is possible to calculate consistent results for any given time period. Simultaneously, the TV and radio channels watched or domains visited by the panellists are matched with a media tree structure: Publisher > Media Channel / App / Website > Section (for digital).

Data provided by the gemiusAdReal study

The most valuable data provided by gemiusAdReal is the cross-media reach or real users value which can be expressed in different target groups (age and gender segments). Another aspect of describing the advertising is an estimation of the number of contacts as well as its quality, i.e. viewability, viewing time, and also viewable reach across media. An added value of gemiusAdReal is its library of all competitive ads that have been captured by panellists' meters. It enables precise measurement of cross-media video campaigns with qualitative and quantitative analysis of the attribution of different media and channels to the whole campaign.

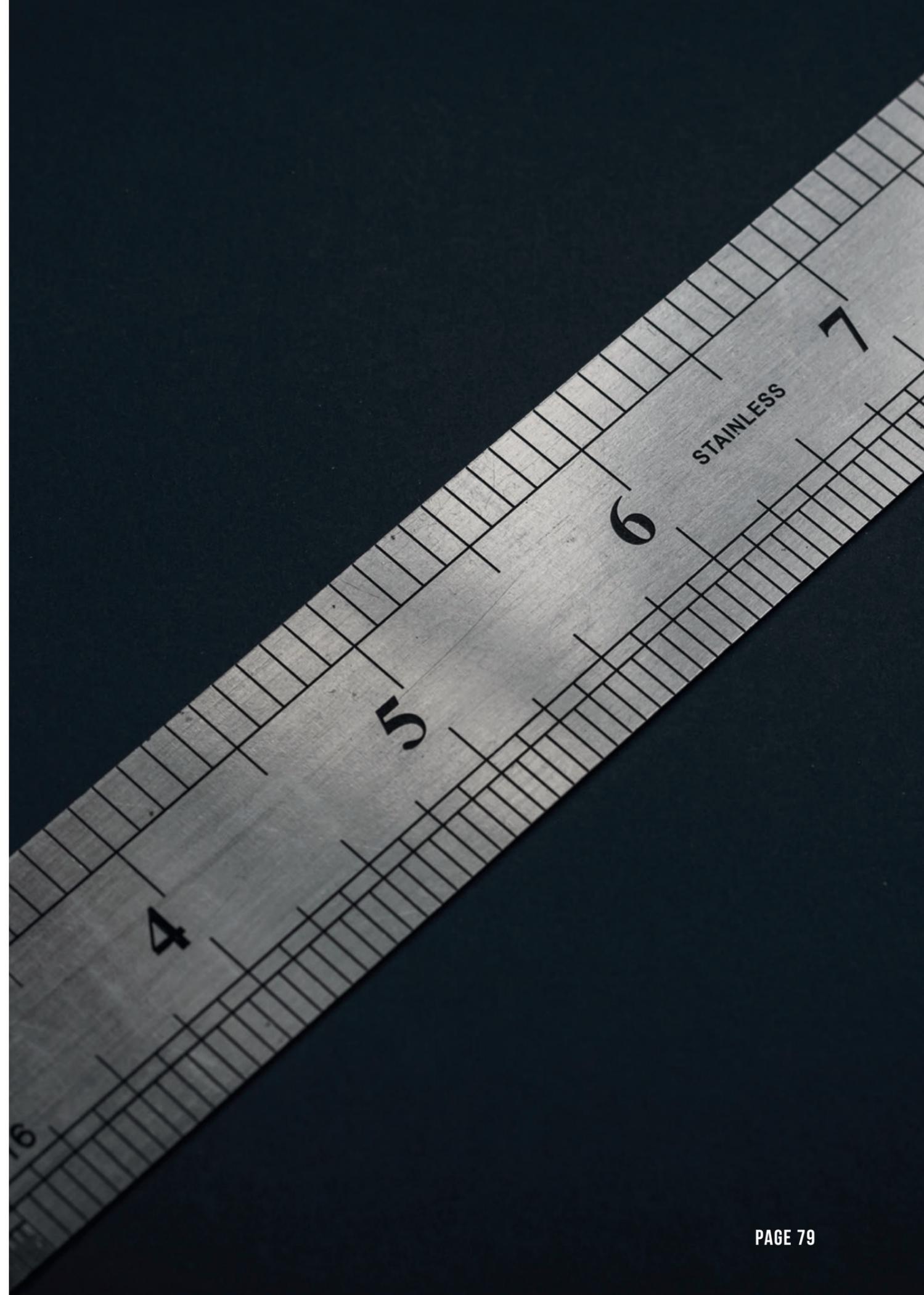
Apart from analysing the data via the interface, it is also possible to receive additional reports, e.g. about display chains, or alerts about the ad appearing on blacklisted sites.

Viewability measurement

- Viewability of TV: Viewability is always met in terms of TV ads (contact longer than 2 sec. and 100% of a TV screen assumed). All TV ads are treated as viewable.
- Viewability in digital: The viewability statistics definition is consistent with IAB standards⁴.
- Viewability in cross-media comparisons: Apart from the viewability rate and viewing time, there are additional indicators relating to cross-media measurement available:
 - Viewable.

Estimated Viewable Impressions: calculated as viewability rate* impressions for video, display and text ads.

⁴ Hereby we refer to the "MRC Viewable Ad Impression Measurement Guidelines. Prepared in collaboration with IAB Emerging Innovations Task Force Version 1.0 (Final) – June 30, 2014", available here: <https://www.iab.com/wp-content/uploads/2015/06/MRC-Viewable-Ad-Impression-Measurement-Guideline.pdf>.





Overview

Ipsos is the world's third largest market research company. We are present in 90 countries, employing more than 18,000 professionals with turnover of over €2 billion in 2019.

We start from the principle that, in a world of rapid change, the need for reliable information to make confident decisions has never been greater. In the media measurement area, as in our many specialisations, we endeavour to use the best of science, technology and know-how to help our clients meet their goals while applying the principles of security, simplicity, speed and substance to everything we do.

We currently offer TV audience measurement services in 21 countries across Africa and the Middle East,

mainly using non-metered approaches, as well as providing establishment surveys in several countries including the UK, Italy and Hong Kong.

Approach to hybrid audience measurement

The key technology we offer to broadcasters is MediaCell. MediaCell is built around a mobile application uploaded onto devices possessed by individuals.

This application enables passive detection of exposure to any audio signal. The system can work in one (or both) of two ways:

- Via audio matching, which takes an ambient characteristic or 'digital fingerprint' and matches it to an audio library of some kind (i.e. the broadcast output of radio or television stations being measured). The resulting markings are picked up via the MediaCell application to determine the precise time and date that the person carrying the device is exposed to the broadcast.
- Via encoding. This involves the introduction of an audio watermark into the content transmission chain (either by hardware or software) of a broadcaster. This places an echo-based,

inaudible code or watermark directly into the broadcast stream. These resulting markings are picked up via the MediaCell app to determine the precise time and date that the person carrying the device is exposed to the broadcast. Encoding also enables platform detection, for example whether someone is watching television on a TV set or online and can report on time-shifting for up to two years.

The open design approach of MediaCell allows for the integration of third-party applications and data. In the UK, for example, we have incorporated RealityMine's on-device meter into the MediaCell app, enabling tracking of online behaviour as well as TV and radio usage.

Panels at the heart

Panellists sit at the heart of our measurement approach. We generally find panel participation to be consistently long-term, regardless of project and country. On top of our participation guidelines and rules, exit surveys confirm that panel members tend to forget MediaCell is on their phone; in other words, participation is genuinely passive.

Throughout various MediaCell projects, including a six-month trial in the Netherlands, a similar pattern emerges; after around the first three months of a study where there is an initial dropout and removal of non-compliant panellists, we see a yearly panel churn of just 20%.

A prime example of this 'stickiness' can be seen in the London Radio Listening Panel. This was set up several years ago in consultation with RAJAR, the UK radio measurement body, and still endures as a technical testing ground for MediaCell. Despite there being an absence of recruitment 'top ups', a third of original panellists were still participating more than five years later.

This long-term participation is not just economically efficient but also guarantees a richness of longitudinal data where a population's listening habits can be tracked over time, through technological, political and market change.

Recruitment and on-boarding

When MediaCell respondents are recruited either face-to-face, by CATI or online they are provided with an overview of the project, its purpose and what is expected of them in terms of participation. Most of the interview consists of the details we want to collect; contact information, demographics, media consumption etc. and tends to be fairly short.

After the survey has been completed, the respondent is sent a link to our terms and conditions and privacy policy and, following acceptance, the quick and effortless installation of the MediaCell application onto their Smartphone ensues. Shortly after this, respondents receive the relevant panel literature in the post.

Respondents will be contacted by Ipsos a few days' later via a telephone courtesy call when they will be reminded of the purpose of the study, the panel rules and, if necessary, any queries they may have or issues they are experiencing will be addressed.

For most, this will be the last they hear from us except for when they receive their periodic incentive. After the call, should they have any further questions or concerns at any stage, a quick contact can be made via the application to either call, SMS or e-mail us directly.

The MediaCell Backend Production System

The processes we go through behind the scenes to make the panellist journey as smooth as possible is managed by a specialist team utilising our panel management tool, the MediaCell Backend Production System (MBPS).

The system is designed to cover the full panellist life cycle, from recruitment to data production. A full history of our communication with panel members is stored in the system. Compliance data can be reviewed and listening data edited, weighted and reported in a format recognisable to audience measurement software analysis tools.

All communication and compliance metrics can be examined via various in-built quality control reports,

FIGURE 06: MEDIACELL: ENABLING CROSS-PLATFORM MEASUREMENT



Source: Ipsos, 2020.

enabling transparent panel management. Data is sent back when a panellist is connected to the internet, via either 3G/4G or Wi-Fi, on a regular basis. MediaCell panels invariably hold a very solid rate of connectivity, on average, over 90% of devices send back data within a 24-hour period.

Other keys metrics commonly used for compliance monitoring include:

- Motion / carry-time – does the handset follow the person?
- Audio level – is the microphone picking up audio?
- Charging / battery level / phone on – is the phone functional for audience measurement?
- Termination of app – does the panellist terminate the MediaCell app?
- Interaction with phone (screen taps, calls) – is the phone used in a normal way?

Continuous monitoring of all these metrics has enabled Ipsos to recommend minimum compliance standards such as how long a phone should be in motion every day and how long on charge.

Extending to Cross-Media Measurement

At the end of 2016, Ipsos was commissioned by the BBC to build a cross-platform measurement system to report on audiences to a total of 250 television, radio and the internet stations, all media where the BBC enjoy significant audience share.

Almost four years later, the panel – known as Compass – provides a passive, single-source, cross-platform and multi-media audience reporting system for BBC. The panel size is 3,000 individuals. Panel members are asked to upload an app combining both MediaCell audio metering (TV and radio) and Reality Mine’s passive On-Device meter onto all the devices used to access content.

During the COVID-19 crisis, we see additional value from the approach: not only are people recruited using virus-resistant methods (CATI and online), but the panel is also managed remotely and data capture is entirely passive.

Data output includes minute-by-minute audiences, covering viewing and listening both in the home and outside, as well as all viewing to catch-up and streaming services.

Digital Audience Measurement

In 2019, Ipsos were appointed by UKOM to deliver Digital Audience measurement in the UK. This mobile focused project, branded Ipsos Iris, will future proof the measurement of digital content in the UK.

The core components of the new service are:

- The Establishment Survey, providing the universe estimates and recruitment targets;
- A 10,000 individual single source mobile first, multi device panel which levers on the BBC Compass panel (described previously);
- Site Centric Measurement of websites and applications;
- Campaign Measurement;
- Data Science;

Most importantly the service will be within the MediaCell Technology infrastructure, allowing the introduction of the audio matching, to provide single source, cross media measurement.

FIGURE 07: BBC COMPASS: A PIONEERING APPROACH TO CROSS-PLATFORM MEASUREMENT



- A **single source, multi device passive panel** (3 000; UK nat-rep)
- **MediaCell+** a single app that integrates mediaCell audio metering and RM passive on-device tracking
- **250** TV and radio stations measured
- Reality Mine on **other devices**
- Supplemented by a **mobile-first media diary**

Source: Ipsos, 2020.



Driving a deeper understanding of TV and online video content

While broadcast still dominates the TV & Video landscape, media owners are increasingly designing offerings to revolve around an individual's preferences. Streaming and subscription services are firmly mainstream and, as competition heightens, audience engagement and personalisation have never been more important.

The Cross-Media Audience Measurement we provide to clients gives industry players a true understanding of how individual types of media and channels perform. It shows how people are accessing content, whether on live TV, catch-up and online video streaming services. And it shows what content they are viewing.

Kantar's solutions deliver gold-standard currencies in Cross Media Audience Measurement to the industry. This enables all players to understand and monitor audiences and media consumption habits so they can make informed business decisions.

Media owners can measure TV and video consumption across all devices and get a clear view on how their content is performing. They can benchmark against their competitors and make decisions about programming to maximise revenues for their advertising space and air time.

Media agencies and brands can use this data to make comparisons across different media and platforms. They can strategically and tactically plan campaigns. They can optimise their media planning on the fly and guide their investments decisions to deliver the best results.

We deliver hybrid measurement solutions around the world with live services in Chile, Denmark, Finland, Netherlands, Norway, Spain, and the UK. We are also deploying Cross Media Audience Measurement services in Switzerland, Brazil, Canada, Colombia, Peru, Israel, Slovakia, Hong Kong, Italy, Russia and Turkey. Hybrid measurement is at the heart of gold-standard audience measurement and we look at further expanding the footprint over the next few years in the nearly 50 markets where Kantar operates.

Kantar's hybrid measurement models are built on our expertise, from recruiting and managing nationally-representative audience panels through to integrating datasets. These are sourced by leveraging the latest metering technologies running on advanced content detection technologies.

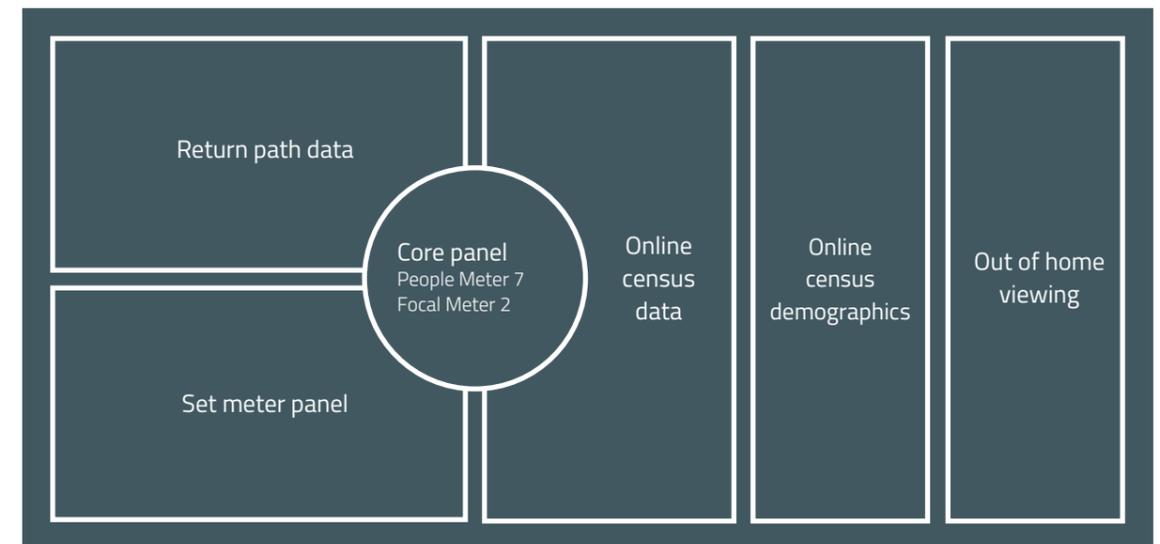
Cross-media audience measurement methodologies

At the heart of our blueprint for Cross Media Audience Measurement are core TV audience panels (see figure 08). We then expand or combine this core panel data with online behaviour data and 'census', or 'total viewing' data from publishers' own platforms. This powerful combination provides an accurate and deduplicated view of not only how many people are watching, but what type of people they are - with demographic profiles obtained from our panels or other first or third-party data sources.

Further data can be collected from set-top-boxes and other devices, through multiple well-established data partners, to accurately measure 'long tail' programming with smaller ratings and for niche audience segments on the TV screen. And Kantar's blueprint also enables insights on out-of-home viewing using the latest portable metering technology.

Kantar works in partnership with Joint Industry, Media Owner Committees and of course individual clients directly to deliver hybrid audience measurement models that are structured to meet the needs of local markets. We have recently been appointed to measure digital audiences of eight regional TV channels in Colombia. Our relationships with the

FIGURE 08: KANTAR BLUEPRINT FOR CROSS-MEDIA AUDIENCE MEASUREMENT



Source: Kantar, 2020.

industry will continue to strengthen as we finalize our roll out for cross-media audience measurement services in countries like the UK for BARB and Israel, where Kantar has been chosen to deploy our latest router metering technology.

Metering and content detection technologies focus

To measure viewing beyond the main TV set across platforms and devices, Focal Meters are attached to routers in the home. Kantar's Focal Meter 2 can identify all TV and video content that is tagged by content owners, whichever digital device is detected within the home network. In combination with this router metering technology, video tagging delivers granular and accurate viewing data for programmes and advertising, in and out of home, enabling the creation of TV and video currencies.

At a time where TV and video viewing has seen a dramatic shift as audiences have adapted to the new environment, cross-media audience measurement solutions are critical to enable all media players to respond to trends in a timely fashion, so they keep existing and reach new audiences.

To illustrate this point, we have seen how Norwegian audiences have been using all screens to consume more content. During the outbreak of the COVID-19 pandemic (week 12 – 15 2020) there was a considerable increase in daily viewing minutes across all devices including computers (83%), tablets (77%) and smartphones (75%). In comparison, increase in TV viewing only increased by under a third (30%).

All Video On Demand platforms also enjoyed an uplift but, more surprisingly, the cross-media audience measurement data from the market reveals that Norwegian households with a Netflix subscription actually increased their viewing on YouTube & broadcaster players more than Netflix (see figure 09). Through the Focal Meter, we are able to capture top line reach and time spent viewing even for Subscription Video On Demand and free streaming sites where content has not been tagged.

Kantar is constantly developing the technology to provide the most accurate and timely data. Our newly developed People Meter 7 is currently on a field trial in the UK and will be rolled out further from this year onwards. The latest people metering technology

FIGURE 09: DAILY VIEWING BY PLATFORM - NORWAY



Increase in daily viewing minutes. All individuals 2-79 years / Netflix households make up 62% of the total universe.

Source: Kantar, 2020.

comes in the form of an aesthetically pleasing tablet device that improves panellist experience and helps build a more sustainable panel with remote software upgrades. The People Meter 7 runs Kantar’s most advanced audio matching (i33) and watermarking (SNAP and INK) technologies, which are integrated as a native capability (see figure 10).

Data science techniques focus

Kantar integrates data sources that are external to the core panel. This improves the granularity and the robustness of the insights on audience behaviour.

The service enables integration of broadcaster and other publishers’ Video On Demand player data, gathered using Kantar’s tagging solution or delivered via a direct integration, with people-based behavioural measurement. By combining both panel and external data sets, the potential of both can be leveraged:

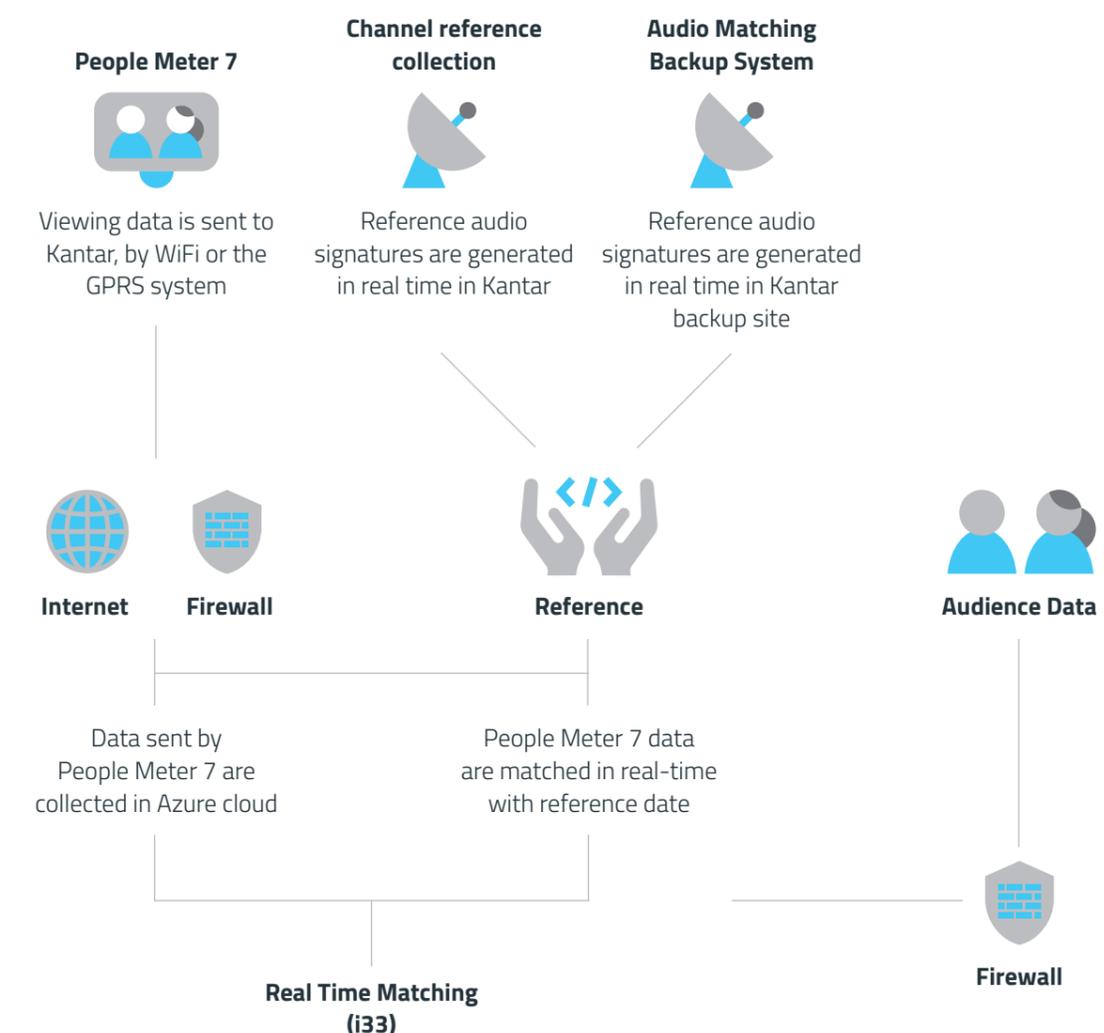
- Panel data provides an overview of the viewing landscape. Offering individual level insights from a well-managed, well balanced panel.
- Census data provides high granularity through passive measurement, providing reliable viewing totals at device level for the platforms that it measures.

We leverage data science to enhance audience measurement in a variety of ways. In Canada, Kantar has been commissioned by Numeris to provide its data science methodology to fuse television audience measurement and return path data into a single dataset. This will allow for more reliable and granular data for all TV channels and programs.

Kantar’s Cross Media Audience Measurement service is a step forward in the understanding of audiences. Video over IP and ‘long tail’ programming is more accurately measured, whilst the strengths of panel-based measurement and currency data delivery are maintained⁵.

⁵ For more information on Kantar’s Cross Media Audience Measurement, visit <https://www.kantar.com/expertise/advertising-media-pr/audience-measurement>.

FIGURE 10: GENERATING AUDIENCE DATA WITH THE PEOPLE METER



Source: Kantar, 2020.



NIELSEN

Total Audience Measurement

Consumers have endless options for consuming their favourite video content on multiple devices. This has fundamentally changed how media owners sell their advertising. Measuring audiences and their engagement in today's media environment and producing a currency-grade output while keeping costs under control is a challenging task. A complex mix of methods and technologies is required for complete total audience coverage of traditional and digital content. It is critical that all inputs can be combined to provide an accurate output.

Nielsen is fully committed to supporting the industry through this with our Nielsen Total Audience Ratings. A few years ago, we connected all of our audience measurement capabilities and launched a comprehensive ratings framework for both content and ad campaigns across all consumer access points. The ultimate goal is to deliver metrics that enable comparability of audiences between traditional viewing on TV sets and media consumption that occurs on other devices and platforms. These next-generation metrics allow content owners to better understand the true total audience of their programs and marketers to compare their options so that they can better decide how to put their ads in front of the right consumers, on the right platforms, at the right time.

Nielsen Total Audience Ratings is a universal solution that considers the specifics of each market and is based entirely on Nielsen solutions.

Today's marketplace can be characterised by fragmented audiences who have access to a myriad of content options across multiple platforms and devices. This has fundamentally changed the way in which audience measurement is carried out. Following the evolution of audiovisual content consumption, the scope of the panels has expanded well beyond measuring viewing of broadcast TV content on TV sets. Moreover, considering that the panel-centric approach as a stand-alone solution is not enough to measure these fragmented audiences, the integration of census-level viewing data is unavoidable. Nielsen has developed both the technical and methodological capabilities to address the issues associated with highly fragmented audiences. Our Total Audience solution is underpinned by three fundamental pillars.

1. A **Single Source Panel** constitutes the first pillar and the core element of this solution. Measurement of all viewing devices across all platforms using a combination of TV people meters and router meters provides an optimal balance between pricing and statistical relevance. Nielsen's Nano People Meter and Streaming Meter are the latest generation of our metering solutions, and they have been designed to accurately measure all new viewing modes while at the same time optimising panel management tasks. Both meters deliver enhanced functionality and efficiencies in terms of performance and costs. These proven metering technologies have already been deployed in different markets, such as the United States, Sweden, Australia, Hong Kong, Poland and Ireland.

In countries with low penetration of broadband access (fibre or ADSL) and where online traffic takes place mostly through mobile devices, the router meters would only allow us to measure a small part of the universe and therefore in these markets we use On-Device Meters to measure streaming on digital devices. A combination of mobile panels and census-based measurement is therefore implemented to capture internet,

video and other media on smartphones and tablets.

2. **Digital Census** measurement, the second pillar, is another key element of our Total Audience solution, and it is aimed to collect census-level data of streaming of tagged content. Our Digital Census solution is enabled through the integration of the Nielsen SDK, which was developed leveraging years of experience in measuring digital environments and designed to guarantee an accurate measurement of all devices across all platforms for all content types. Integrated directly within native apps and web-based players used by the participating streaming services, the Nielsen SDK provides a reliable and future-proof approach tailored for the market needs. The content can be identified either via tags that are introduced using the client's content management systems or through ID3 tags converted from audio watermarks if these are implemented for TV audience measurement.

As a supplement to the Single Source Panel, the Digital Census measurement preserves the required level of granularity by adding information which cannot be captured by the meters installed in the panel households. In particular, for those streaming services measured at census level through an SDK, the devices monitored by the Streaming Meter in the panel can be identified in the captured census database and the streaming of the tagged content on these devices can be included in the daily crediting at the panel level. The integration of the Digital Census data, for all the streaming devices measured in the panel, allows us to deliver full Single Source Panel data including program/content level data for each measured device used by the panellists.

3. The third pillar of our solution is to bring together the panel and census datasets and deliver **daily respondent-level Total Audience data**. The Digital Census solution will measure

every single streaming session but it will not identify who actually saw the content if the device does not belong to a panel member. As explained above, the Single Source Panel data with integrated census records for the panel devices can tell us who saw the content in those cases, but the sample size is usually insufficient to measure fragmented audiences (i.e., audiences of programs with small reach figures), especially on new screens. To address this problem, we designed a special algorithm that brings both datasets together (panel data and census data) and delivers daily respondent level Total Audience data.

By Total Audience we mean the ability to deliver consistent, deduplicated cross-platform audiences, combining viewing via traditional broadcast TV, OTT and streaming services. The audience figures report the combined audience between TV and digital platforms, as incremental or unique by platform, for any time-segment and defined content. In a nutshell, our Total Audience solution is based on a full integration process of the Digital Census data into the Single Source Panel sample, with each panel device (panel sample unit) covered by a certain number of unique census devices representing this particular panel device. In other words, the panel sample units will not only represent the population but will actually include the true census devices covering a portion of the represented population.

Depending on the market needs, these three components can be combined to deliver different services. For example, a single source panel would be more than enough to deliver traditional TV ratings. When combined with the other two pillars, we would have a total audience measurement solution for TV and Audio. However, the same components could be used to provide ratings for digital content only (i.e. non-linear TV) through DCR, or digital ads only (i.e. non-linear TV) through DAR, or radio and audio measurement, as described below.

Digital Content Measurement

Viewing of non-linear content through PC and mobile devices is provided through Nielsen's Digital Content Ratings (DCR) service. As with DVR, DCR is also a census-based SDK approach; however, digital panel data is also used to measure digital content for sites and apps that do not yet have an SDK implementation. All of Nielsen's content measurement, including traditional linear TV ratings, DVR, VOD, SVOD and DCR are combined together in Nielsen's Total Content Ratings (TCR), launched in the US in 2016, which provides clients with total, deduplicated measurement of content across platforms and add models. DCR has been adopted by the online JICs in Australia and Italy, and has been launched in Japan and Thailand.

Digital Ad Measurement

Nielsen provides measurement of dynamic ads across PC, mobile and connected TV platforms via its Digital Ad Ratings (DAR) service. Just as with DVR and DCR, DAR is a census-based measurement of dynamic ads based on ad campaigns. Nielsen's Total Ad Ratings (TAR) provides deduplicated reach of ad campaigns across digital and linear ad models, including inputs both from DAR and C3/C7 ratings which are used in the US. DAR is available in many European markets, incl. UK, Germany, France, Italy, Spain, Belgium, Netherlands, Greece, Poland, Czech Republic, Hungary and Norway.

Audio Audience Measurement

Nielsen provides measurement and consumer research for stations, advertisers and agencies in the audio industry. The size and composition of radio audiences nationally and in local markets and of audiences to network radio programming and commercials in the US are estimated. Broadcasters use this data to price and sell advertising time, and advertising agencies and advertisers use the data in purchasing advertising time.

We have developed an electronic Portable People Meter™ ("PPM®") technology, which is deployed across many of our customer offerings and have licensed to other media information services

companies to use in their media audience ratings services in countries outside of the U.S. We have commercialised our PPM ratings service in 48 of the largest radio markets in the U.S. Nielsen's PPM technology is also used commercially for national TV Out-of-Home, as well as integrated into Local TV measurement in 2019 in 44 local markets. Outside of the US, PPM panels are currently being used in Canada and Iceland (in both cases for TV and radio measurement) and in Norway and Denmark, for radio measurement.

Beyond measurement: Advanced Video Advertising

In addition to building the infrastructure to measure addressable advertising, Nielsen has developed an addressable advanced video advertising platform that enables real time targeted ad replacement in live linear TV across connected, enabled Smart TVs.

The Nielsen Addressable TV Ad platform can be integrated across all Smart TV brands and into all existing broadcast infrastructures and agency workflows to unlock the full value of linear.

By unlocking addressable inventory, media sellers will enable maximum delivery of ROI to advertisers across both linear and addressable TV impressions. Programmers can establish whether certain addressable ad loads are open to single or multiple advertisers, and manage campaign pacing. Its open and flexible approach will allow brands and agencies to ingest various third-party data sets to create target audiences, upload ad creative and manage ad budgets, pricing, pacing and frequency capping through the platform.

Nielsen is currently in the beta phase of its Addressable TV Ad platform roll-out. This is a first step towards unlocking the potential of linear addressable TV advertising with programmers as commercial launch is being prepared for the second half of 2020 in the US, and in 2021 for International markets.





**PART 04:
INTERNATIONAL
AUDIENCE
MEASUREMENT
INITIATIVES
AND COLLABORATION**

The WFA cross-media measurement Initiative: Advertisers take the lead

Advertisers have long called for the opportunity to understand the true coverage of an advertising message across media channels. They want the ability to measure viewers of their advertising across screens, platforms and channels with a single measurement – something that existing measurement solutions have not been able to fulfil entirely.

Throughout 2019, a group of global advertisers, through the World Federation of Advertisers (WFA), decided to agree on a Framework for cross-media measurement, and then to develop systems to measure audiences across all screen types and content suppliers. The process was initiated with a series of cross-industry assessment calls and working group sessions around four key topics: *Standards and Currencies*, *‘Plumbing’* (technical specs), *Privacy*, and *Governance*.

In April 2020, the WFA drafted an advertiser-supported document which formulates the key principles and demands in terms of better cross-media measurement, also termed the advertiser ‘North star’. In short, the desired measurement system should allow:

- Deduplicated cross-media reach and frequency across the full lifecycle of a media campaign, i.e. planning, reporting and also optimisation during the campaign lifecycle.
- Real-time (or close to real-time), ‘tagless’ and continuous data capture.
- Measurement of video as well as other digital formats.
- Outputs and outcomes reporting such as brand and sales lift.

Any design should meet a set of basic industry requirements such as respect for consumer privacy, comparable metrics, data transparency and verification, and it should allow measurement of advertising as well as content.

While this framework formulated global principles, advertisers acknowledge that implementation will require local adaptation of various degrees depending on market differences. To that end, two pilot markets were announced as testing grounds for the framework; in the UK, a cross-media measurement solution will be tested and managed by the local advertising body, ISBA, under the name “Project Origin”, and in the US, a project will be tested through the Association of National Advertisers (ANA).

A technical proposal has been submitted by Google and Facebook which was subject to an industry peer review in the summer of 2020. This joint blueprint by

“Advertisers have long struggled with poor quality data that doesn’t allow them to properly assess how best to invest their ad budgets across multiple platforms and media. This body of work provides a blueprint to build a cross-media measurement solution that responds to advertiser needs. The WFA is proud to have facilitated this work in partnership with key markets, platforms and broadcasters and looks forward to seeing it widely implemented across geographies”

--- Stephan Loerke, CEO, WFA

(Source: *Global advertisers unveil a collaborative new approach to cross-media measurement*, 17 September 2020, <https://wfanet.org/knowledge/item/2020/09/17/Global-advertisers-unveil-a-collaborative-new-approach-to-cross-media-measurement>)

data engineers from the global platforms proposes a solution based on ‘virtual IDs’ to deduplicate ad impression data. While this approach may work for digital platforms, many challenges remain to incorporate television data into a complete cross-media solution.

At the time of writing this is all work-in-progress with many issues to be considered. How will this be done technically and to what standards whilst maintaining privacy rules? Who will fund and run this and how? What will it be used for, and how will this fit into existing currencies, measurements and JIC’s in the countries involved? Will the existing measurements be used or new ones produced or a combination of the two? Is the aim to have standardisation across countries to meet the needs of those who advertise across screens, platforms and countries or, if not, how will the needs of those advertisers be met? Broadcasters and other participating media groups need to decide what role, if any, they, their measurements, their Joint Industry Committees (JICs) and their input – both in terms of effort and financial resources – should have in this initiative.

egta has been following the WFA initiative closely since it started with a clear objective to make sure that the broadcasters’ voice is heard and to argue that existing TV measurement solutions should be at the heart of any proposed solution. In January 2020, egta organised a meeting in Paris called *Bridges in Audience Measurement* which brought together approximately 150 key stakeholders in the advertising and measurement industry to discuss how progress can be achieved in cross-media/total video measurement. In addition, as a response to the WFA’s cross-media measurement principles as well as the technical proposal, egta initiated an extensive internal consultation process amongst its members to collect feedback, ideas and constructive criticism to formulate a response to the process and output so far on behalf of broadcasters.

CFlight – A TV approach to holistic video measurement

While national JICs and legacy media data and currency providers are developing industry-supported solutions to measure audiences across screens and platforms, advertisers have long been criticising the speed of these developments and calling for faster solutions which will allow them to plan, compare and assess the results of their video campaigns holistically. As a result, many companies are proposing to answer some of the questions raised by advertisers through their own proprietary solutions.

CFlight is an example of that from within the TV industry. It seeks to answer one of advertisers’ most pressing questions: How to deliver unified campaign measurement within the premium video ecosystem across screens, platforms and markets. CFlight was introduced as a concept by NBCUniversal in the US in 2018, and adopted by Sky Media in the UK the year after. Both TV companies are owned by Comcast and thus share certain data and technologies.

The main objectives of CFlight are to capture total consumption within a broadcaster’s own video ecosystem and thereby enable advertisers and agencies to think more holistically about video usage, and to raise the bar in cross-platform measurement. NBCU and Sky maintain shared principles around the minimum standards required for the measurement of VOD impressions across all screens and devices. Sky UK now offers deduplicated campaign reach for all platforms and devices, and NBCU are also currently working towards a reach solution.

CFlight is based on an ‘open source’ set of principles which can be adopted by anyone, but implementation will differ depending on the availability of data in markets and capabilities of broadcasters. At the time of writing, Sky Media are in live conversations with other UK broadcasters to launch a version for total TV in the UK, and there is interest from other European broadcasters as well.

The methodology used by Sky UK has been independently created by a trusted source, and

data processing, operations and methodology are independently audited. To protect the core currency used in the market, it uses industry-trusted data sources for linear measurement. As there is currently no industry-approved way to calculate deduplicated reach for linear and VOD for demographic audiences in the UK, CFlight uses the best possible data sources and methodology for calculating reach. The audience data used comes from various trusted sources, incl. BARB, Freewheel and Sky's own 500k household panel.

Global Alliance for the Measurement of Media Audiences (GAMMA)

In May 2019, BARC (India), Médiamétrie (France), Numeris (Canada) and Video Research (Japan) – all of which are individually covered in Part 2 of this report – announced their collaboration to align audience measurement operational processes and technical standards across the globe. A common feature of the four members is that they all act as both measurement companies as well as JICs in their respective markets. The primary objective of this alliance is to create a common technical framework, whereby global digital platforms may actively participate in an effort to further enhance and monetise their digital footprint worldwide. The global body will also work towards future video audience measurement initiatives.

GAMMA aims to leverage the collective knowledge and sector expertise of each member to advance audience measurement solutions worldwide. Through closer cooperation, the participants intend to identify strategies and solutions that are more transparent and standardised. This will ensure greater efficiency, consistency and scope for audience measurement providers and their partners from this point forward.

The four founding nations collectively account for a total population of more than 1.5 billion and represent a combined advertising spend of USD 78 billion (15% of the world total).

The audience measurement activities of egta

In addition to publications such as this one, egta has held regular meetings of its own Audio-Visual Currency Group so that broadcasters, JIC's and as appropriate research agencies can update each other on their plans, learn from each other and work to develop the hybrid solutions.

egta has also done this in communication with the WFA for the advertisers and EACA for the advertising agencies. Alongside the I-COM conferences, egta has met annually to further these discussions amongst others with those from outside Europe. In due course, egta has been able to bring representatives of some of the larger new suppliers of audio-visual content via the internet into these conversations which have highlighted some of the issues discussed throughout this publication.

Audience measurement is also a recurring topic on the agendas of egta's annual Market Intelligence Meetings, and we have organised several stand-alone conferences and events dedicated solely to the topic of measurement. Since 2018, egta has held independent meetings termed Bridges in Audience Measurement which aim to create discussion and dialogue between the otherwise siloed measurement approaches and practices of different industry groups; e.g. between TV and digital, between markets, between metrics and business outcomes, and between industry partners from both buy and sell side. At the time of writing, the most recent meeting was held in January 2020, and gathered industry stakeholders to discuss the WFA cross-media measurement initiative.

egta will continue to follow and take part in audience measurement initiatives, foster dialogue and promote robust and future-looking audience measurement solutions for the TV industry and beyond.

The TV Charter: TV companies' commitment towards the responsible and transparent measurement of advertising in the Total Video ecosystem

A key focus in cross-media/total video audience measurement must be to strike a balance between media owners' legitimate claim to see all their audiences measured and accounted for, and advertisers' demand for solutions which will allow them to plan, compare and assess the results of their campaigns across screens and platforms in transparent and brand-safe environments. To get 'apples to apples' comparison across TV and online advertising, standards, definitions and metrics must be discussed, aligned and agreed. It is fundamental to any total video solution that the industry agrees on how to compare advertising formats and the environments in which ads are shown, and that differences are represented fairly. Setting standards for viewability, transparency, accountability and data comparability is vital to creating a level playing field.

To this end, egta has launched a [TV Charter](#) which outlines broadcasters' commitments to raising the bar for the whole industry. It defines a set of simple principles which aims to raise the bar with regards to measurability, data transparency and accountability and defines measurement standards for the entire TV industry. It serves as a reminder that TV's premium environment – both on-air and online – already meets advertisers' legitimate demands for brand safety, transparency and access to verified data, as outlined in the *Global Media Charter*, published by the World Federation of Advertisers in 2018.

Launched in October 2019, the TV Charter was adopted by a vast majority of egta's 155 member sales houses active in over 42 countries, as well as by notable industry trade bodies such as Screenforce (DE, AT, CH, FI, NL), Thinkbox (UK), ThinkTV (AU/CA) and the VAB (US) which comprise The Global TV Group. The ultimate goal set forward by egta and

[The Global TV Group](#) is to build a solid foundation for the TV industry to move forward in unison – evolving audience measurement, setting the highest standards allowing for comparability on a global level and building bridges with industry stakeholders in an increasingly digital, multi-screen and cross-platform advertising landscape.

“In a fast-evolving media landscape characterised by changing viewing behaviour across screens and platforms, audience measurement too must evolve. As a growing amount of companies develop proprietary solutions in an attempt to solve part of the equation, it seems increasingly clear that the adoption of common industry guidelines is a much better option and that setting standards for viewability, transparency, accountability and data comparability is imperative to creating a level playing field. This is what this Charter is all about; it outlines TV companies' commitment to raising the bar for the whole industry. It is a reminder to advertisers that TV's premium content and environment – both on air and on line - already meet their growing demands for brand safety, transparency and access to reliable and verified data.”

--- **Malin Häger**, Commercial Director, Advertising Nordics, **TV4** Media and former President, **egta**



THE EGTA TV CHARTER

on TV companies' commitment towards the responsible and transparent measurement of advertising in the Total Video ecosystem.

WHAT IS A VIEW TO ADVERTISING?

A view - whether on linear TV and on TV companies' online properties - is a view. TV companies, in their dealings (negotiations, planning, reporting and billing) with advertisers and their agency, will only apply the notion of a **view** to:



Premium content seen in a brand-safe environment over which TV companies have **full control** and for which they take **full responsibility** as publishers



Content that is seen at **normal speed**



With the **sound on**



Full screen or fully viewable



To a **minimum completion rate of 75%**
- with the objective of quickly reaching 100%
(once the practical and technological challenges of such a precise measurement are solved)

CONSISTENT APPROACH TO MEASUREMENT

TV companies commit to a **continued and consistent approach to measurement**:



They will apply the **quality and transparency** of TV measurement to their online properties



They are and will always be **clear and transparent about the origin of the data used** (panel, census, set-top box at household level, etc.)



They are willing to be **independently measured**



They are willing to be **audited**



They will strive for solutions that allow for **cross-platform measurement and comparisons**

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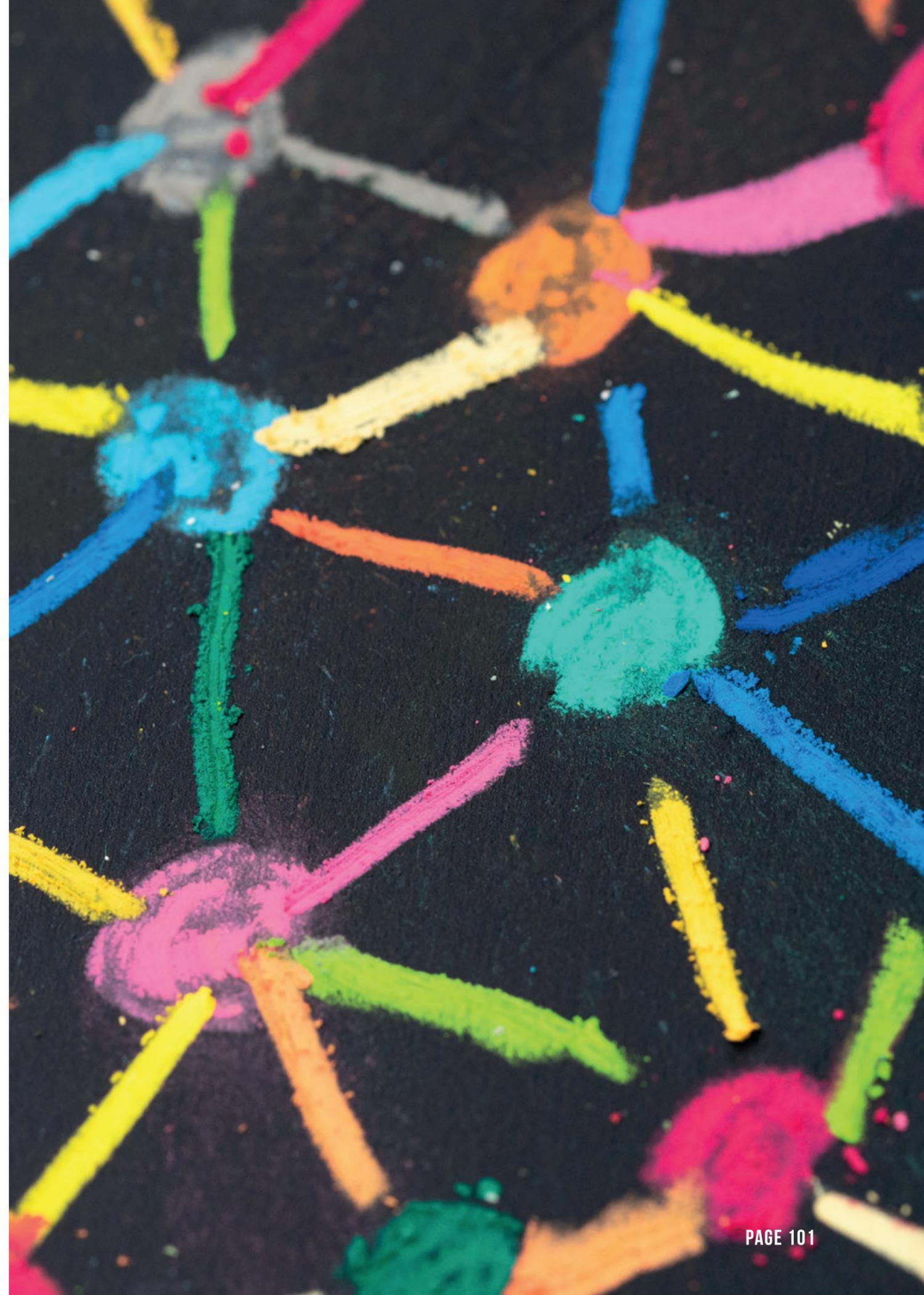
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MORE ON EGTA

egta - association of television and radio sales houses

egta is the Brussels-based trade association of more than 150 television and radio advertising sales houses. egta's members are spread across over 40 countries, mainly in Europe. Together, egta's TV members represent over 80% of the European television advertising market, whilst egta radio members collect 60% of radio advertising revenues in countries where they are active.

As sales houses of both public and private broadcasters, egta members commercialise the advertising space around audiovisual content available on platforms such as traditional television and radio sets, tablets, smartphones, PCs, Smart TVs and other Internet-connected devices.

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