

Deliverable 1

Building Exchange Rates for Media Currencies MOBIME

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Confidentiality: Public

Date: 31.12.2010

This work was supported by TEKES as part of the next Media programme of TIVIT (Finnish Strategic Centre for Science, Technology and Innovation in the field of ICT)

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Abstract

The aim of the MOBIME research project is to find answers to the challenge that Finland is lacking an intermedia currency, i.e. an exchange rate for buying and selling media advertising space in different media. The reason for building such exchange rates is to find better measures for cross-media advertising impact. Media currencies have been built for traditional media, but a radical transformation towards the digitalisation of media has been recently observed. The project objective is twofold: 1) to increase comparability between existing media currencies; and 2) to get more qualitative elements added to media surveys that are said to yield mainly quantitative results. The first objective is carried out by examining whether one single intermedia currency can be achieved, or whether exchange rates between intramedia currencies could be developed. The second objective is carried out by monitoring consumers' everyday media use and user experiences thereof. Comparability between media metrics and getting deeper insight into the roles of media in consumers' lives would benefit both media buyers and sellers.

During the first year of the MOBIME research project the primary stress was on examining the current state of the Finnish media currencies and surveys and their comparability. According to our findings, existing media currencies are collected using different methodologies and have been initiated to serve the respective medium. A media survey data content analysis carried out in 2010 showed that each survey codes and classifies many similar things, but the naming, coding and classifications differ greatly. In 2011 a proof of concept will be developed to specify whether data integration is possible, and under what conditions. The integration of data owned by different entities requires technical, statistical, business and legal issues to be extensively considered and negotiated.

MOBIME research results are based on expert interviews, archival material and public sources of information. Interviews were conducted with industrial representatives in spring 2010, and MOBIME steering group board meetings were held throughout the year. Approximately 30 experts were interviewed in total.

Preface

MOBIME is one of ten projects being researched in the Next Media Programme (NM). The Next Media research programme received funding in the amount of MEUR 3.8 from TEKES in 2010. The programme brings together research organisations and businesses from the media sector, all of which aim to advance state-of-the-art in terms of research and development in Finland. The MOBIME research project has been carried out in co-operation with five commercial organisations and one research organisation, VTT Technical Research Centre of Finland.

The execution of the project was governed by a Steering Committee with the following members: *Katariina Uljas-Ahl* (Dagmar Oy, project leader); *Lena Sandell* (Finnpanel Oy); *Heini Häyrinen and Tina Åström* (Sanoma Television Oy/Nelonen Media); *Sirpa Kirjonen* (Finnish Newspapers Association Sanomalehtien Liitto); *Caj Södergård* (VTT); and *Virpi Öström* (TNS Gallup Oy). A number of experts representing the media industry were interviewed during the project (see list of interviewees in Appendix A).

The appointed Project Manager was *Ulf Lindqvist*; industrial representative and steering group member interviews, the reporting of findings, and the overview of national and international surveys was executed by *Anna Viljakainen*; fusion strategies were analysed by *Hannu Kuukkanen, Paula Järvinen* and *Pekka Siltanen*; mobile data collection technologies were studied by *Janne Pajukanta* and *Johannes Peltola*; and the study on Visual Analytics was carried out by *Paula Järvinen*.

Espoo, 31 December 2010

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1 Introduction

1.1 Background and Introduction of MOBIME

The MOBIME research project was initiated at the beginning of 2010 as part of the Next Media Programme (NM). The scope of the project had been developing for some time at VTT, since the first idea was born in 2008 after the release of the research project “Media and advertising from now until 2013”. A core finding in the report was that Finland was lacking an intermedia currency (an exchange rate for buying and selling media advertising space in different media), but that the current research methods available for developing one were considered too costly and too slow in such a small market. Intermedia currencies are being built internationally (such as the IPA TouchPoints survey in the UK, see Chapter 5), since they are considered a prerequisite for an industry that has such a high dependence on advertising revenue. Each media in Finland has its own established currency that measures quantity, rather than quality. They measure readerships (the National Readership Survey), viewing and listening figures (TV Audience Measurement and the National Radio Listening Survey), or contacts (Outdoor Impact) in numbers. At the same time, these currencies have been built for traditional media, but a radical transformation towards the digitalisation of media has recently been observed. In respect to media advertisement buying and selling activities, we are no longer talking about different media or channels; we are starting to talk about brands. Thus, we should better understand how to reach and impact consumers with our advertisements or content regardless of the platform from which it is consumed.

These findings were the outset of our initial research question: how to build a cost-efficient tool for automatic or semi-automatic intermedia-level data collection (explaining the original project title ‘MOBIME – Mobile Data Acquisition and Intermedia Currency’). The research question had two sub-objectives: 1) to get comparability among different media metrics; and 2) to gain a deeper understanding of the roles of media in consumers’ lives. During the first year of MOBIME the tasks and

objectives were elaborated and clarified, and research objectives were prioritised. What became apparent was that the task at hand was not as trivial as it seemed at first sight. In fact, it is much more complex and multifaceted and some important groundwork would have to be done before the original research objectives – to develop an intermedia currency and a tool for mobile data collection (see Chapter 7, ‘Mobile Data Collection Technologies’) – could be achieved.

To explain our current state, an analogy can be made to the European currency, the euro. Our objective is to examine whether one single currency (i.e. an intermedia currency; the ‘euro’) can be achieved, or whether each media have their own currencies that are scaled against one another using exchange rates (i.e. intramedia currencies of readerships of publications, viewing and listening figures, and contacts; ‘francs’, ‘pesetas’ and ‘markkas’). An intermedia currency would mean that all intramedia currencies would be evaluated and rated equally. An exchange rate would mean that the measurements of all intramedia currencies would be executed differently and scaled against one another. Furthermore, each medium would retain its own currency, which would be updated following its own cycles and methodologies. An exchange rate exists and develops based on the changes made in each currency. The groundwork which must be done in order to move forward with either of these two alternatives is the harmonisation of data. During the first two years of the MOBIME research project the primary stress is on examining what kind of data exist and what needs to be harmonised in media data (such as in the background variables) to enable data integration. A proof of concept will be developed to specify whether data integration is even possible. This work will determine whether the Finnish media markets will end up with a ‘euro’ or exchange rates.

There are several important issues related to the integration of data. Media currencies and surveys are owned by commercial organisations and/or Joint Industry Committees, i.e. The National Readership Survey by the Finnish Audit Bureau of Circulations (Levikintarkastus Oy), TV Audience Measurement and The National Radio Listening Survey by Finnpanel Oy, Outdoor Impact by JCDecaux Finland and Clear Channel Finland Ltd., and TNS Atlas and TNS Metrix by TNS Gallup Oy. Thus, a necessary task to be accomplished at a very early stage is the development of a business model commonly agreed by everyone willing to go forward with data integration and the development of an end product. A business model determines what data fusion strategies will be chosen (see Chapter 6, ‘Fusion Strategies’). Furthermore, one of the objectives of the project is to develop a reporting and visualisation system for the integrated data (see Chapter 8, ‘Visual Analytics’). During the following year(s) it will be clarified as to whether such a system will be demonstrated or actually constructed,

depending on the amount of work put into data integration, as well as time/budget constraints.

Even if the primary project objectives were adjusted during the first year of MOBIME, one thing remains the same: currencies measure quantity, rather than quality. The Finnish media industry is craving deeper insight into the reachability, effectiveness, and the roles of different media in consumers' lives and decision-making processes. One project objective is therefore to evaluate, verify and exploit the potential of qualitative data in developing holistic customer and market insight into the role of different media in consumers' everyday life experiences and their impact on consumers' behaviour. The objectives and tasks of this work will be further specified at the beginning of 2011.

The following chapters will elaborate on the background of the MOBIME research project in more detail. They will present the Next Media Programme (1.1.1), why MOBIME is such a challenging project (1.1.2), the scope of the research (1.2), and the roles and competencies of each member of the project steering committee during the first year (1.3).

1.1.1 The Next Media Programme (NM)

Media is very much present in daily life; the average Finnish person consumes media of one type or other for about eight hours a day. The Next Media Programme (NM) aims at creating innovations that meet people's insatiable need for engaging in and activating media experiences. The business objective of the NM is for Finnish companies to acquire a significant share of the growing media and entertainment market, which is globally exceeding the telecommunications market. In order to achieve this business objective in the rapidly changing global environment, highly efficient and agile processes must be carried out so as to accelerate the creation of media concepts and platforms. This requires developers, deliverers and users to operate closely together.

In addition to forming an extensive collaborative structure, the NM programme will create breakthrough innovations in co-operative content production, user targeting, media experiences and media concepts as well as in business models and organisational development. These cascaded innovations lead to the overall breakthrough target of the NM programme: engaging media services and enabling technologies that support co-creation and participation as well as monetising media experiences in both real and virtual environments.

The Programme serves the major needs of media users: news and information, education and learning, entertainment and games, and community media, which is still in its infancy. If the effort is successful, it could even contribute to the identification of an entirely new media genre. The research is divided into four generic themes that are required in all of the abovementioned genres. The themes arranged along the axis “technology – user – business” are media access, personalisation, social interaction, business models and concepts. Every theme consists of a range of topics, each with its own specific research questions. The research carried out in the various topics should be strongly coordinated. The Next Media Programme is planned to last until 2013. One of the measures of success of the Next Media Programme is that it has enabled the Finnish media industry to generate profitable content services and enabling technologies that are used by significant parts of the population both nationally and internationally.¹

Next Media consortium and the budget

- 10 cases
- 4 verticals, business initiatives
- 4 work packages (research themes)
- 44 companies
- 8 research organizations
- 6 scientific areas

58 person years
6,8 M€ total costs
75/25 model
70,01% public funding
3,8 M€ TEKES funding

Next Media funding structure	
Large companies, own funding	1 271 263 €
Large companies, Tekes	684 526 €
Small companies, own funding	767 245 €
Small companies, Tekes	767 245 €
Research organizations, own fundin	992 355 €
Research organizations, Tekes	2 315 494 €
Yhteensä	6 798 128 €

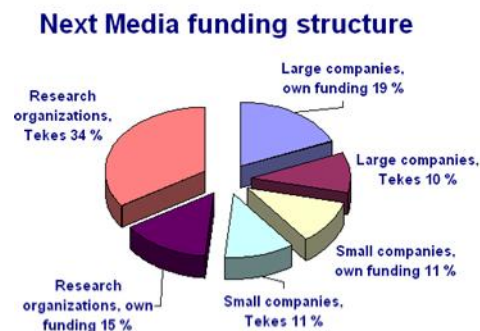


Figure 1: Next Media, 2010

¹ http://tivot.dicole.net/presentations/attachment_original/551/4938/NextMedia_SRA_2009_05_20_2.pdf

1.1.2 MOBIME – an Enormous Challenge

In 2009, media advertising spending in Finland (excluding production costs) reached over EUR 1200 million. Roughly 60% of all advertising revenue was invested in printed media, and around one third in digital media (see Figure 2). Media advertising spending suffered a severe setback following the global financial crisis. In effect, spending on advertising both in Finland and around the globe began to drop in November 2008². Spending on advertising follows the cycles of economy; in the peak of a boom, the growth in advertising spending exceeds economic growth; during a downturn, advertising spending cutbacks exceed the decreases in economy. This is exactly what happened in 2009, as the national GDP in Finland decreased by over 7%, and ad spending plummeted by almost 16%.³

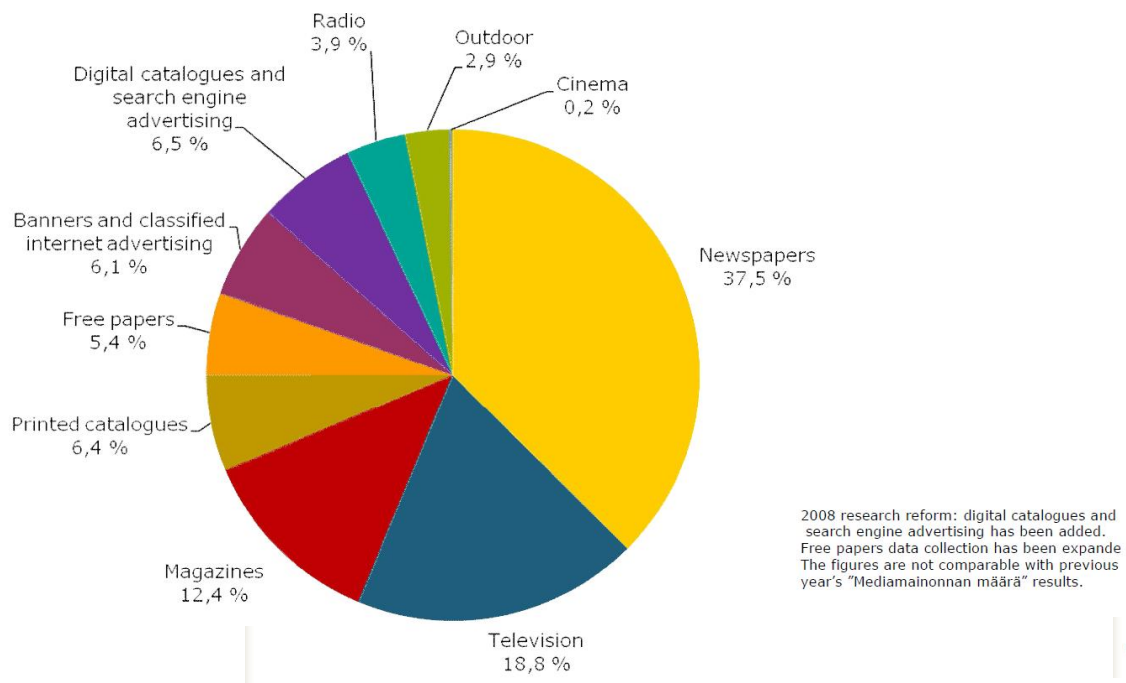


Figure 2: Media advertising in 2009 in Finland, excluding production costs. The ‘small ad cake’.

Decreases in advertisement spending have had diverse consequences for different media (see Table 1). The recession has accelerated the gradual shift of advertising spending from traditional media – and most significantly from printed media – towards online

² TNS Gallup Media Intelligence

³ Antikainen H., Kuusisto O., Bäck A., Nurmi O., & Viljakainen A (2010). Viestintäalan nykytila ja kehitystrendit 2010-2011. GT-raportti. VTT:n mediatekniikan asiantuntijapalvelun julkaisu. January 2010.

media. Looking at the share of advertising revenue in total revenue, there is, however, a fundamental discrepancy between media. What this means is that certain media are much more dependent on advertising revenue, which we know to be highly sensitive to market economy fluctuations. It also demonstrates why the MOBIME research project is an enormous challenge.

Table 1: Advertising Revenue by Medium.

MEDIA	Share of total media ad spending in 2009 ⁴	Change in media ad spending in 2009 (change %) ⁵	Share of media ad revenue in total revenue ⁶
Newspapers	37.5%	- 21.6%	50 - 60%
Urban and pick-up papers	5.4%	- 18.7%	100%
Magazines	12.4%	- 22.6%	25 - 29%
Commercial TV	18.8%	- 11.6%	57% - 80%
Online	12.5%	+ 6.0%	50-90%
Outdoor	2.9%	- 17.5%	100%
Commercial Radio	3.9%	- 1.7%	95% - 100%

Looking at printed media, around 55% of newspaper and only 30% of magazine revenues is advertising revenue (the remainder comprises circulation revenue, i.e. subscription and single copy sales). Urban and pick-up papers, commercial radio and outdoor media are entirely dependent on advertising revenue. Commercial television is mainly dependent on advertising revenue, since pay-per-view TV revenue is yet to pick up in sales. For online media, advertisement revenue is still the main source of income. The additional revenue of online media is mainly acquired from B2B online services, such as financial or news service subscriptions, rather than income from B2C services.⁷

Advertising revenue is an essential source of finance for the Finnish media industry. Media currencies (i.e. exchange rates for selling and buying advertising space in media) are vital in determining where the money is spent.

⁴ TNS Gallup Media Intelligence, Mainonnan Neuvottelukunta

⁵ TNS Gallup Media Intelligence, Mainonnan Neuvottelukunta

⁶ Differing values from Statistics Finland Joukkoviestintätilasto 2008, and the Association of Finnish Advertisers <http://www.mainostajat.fi/mliitto/sivut/mainonnanmerkitysmnk.pdf>

⁷ Antikainen H., Kuusisto O., Bäck A., Nurmi O., & Viljakainen A (2010). Viestintäalan nykytila ja kehitystrendit 2010-2011. GT-raportti. VTT:n mediatekniikan asiantuntijapalvelun julkaisu. January 2010.

Existing media currencies:

- The National Readership Survey (NRS) for printed media (Kansallinen mediatutkimus, KMT)
- TV Audience Measurement (TV-mittaritutkimus)
- The National Radio Listening Survey (Kansallinen Radiotutkimus, KRT)
- Outdoor Impact for outdoor media

There are a number of other media surveys that are widely acknowledged and utilised, but which are not considered currencies, such as:

- TNS Atlas, a cross-media survey
- TNS Metrix, an online audience measurement tool

One challenge that is faced is that existing media currencies are not mutually compatible or comparative. Media currencies are measured using different methodologies and are initiated to serve the respective medium. Great differences lie in the depths of the information gathered, as well as how and what information was gathered (see Chapter 4, 'Synopsis of Existing Media Currencies and Surveys'). These differences were highlighted by one interviewee, who remarked: "how can you compare apples with pears?" There is a strong tradition in the Finnish media markets that media currencies are not weighted to one another. However, internationally there is a trend of combining different survey results in order to gain a more general view.

"It is challenging to compare different media impacts/contacts, since engagement and usage differ from one media to another. There are also differences in how existing single media currencies define impacts/contacts... Crossmedia measurements most probably will have to deal with different sampling procedures and different ways of collecting data within the same survey." (Member of the project consortium)

Each media have their own established currencies, or exchange rates, measuring mainly consumers in terms of quantity. The data processing of currencies takes place using multiple planning software, built based on the needs of each type of media. However, there is a need for more information on the **reachability**, **effectiveness**, and the **role of different media** in consumers' decision-making processes. There is a need for deeper insight into the role of different media in consumers' lives, since consumers are gaining more power – they are faced with more choice when it comes to the number of media available and the channels available within each medium. Thus, the possibilities to

affect the choices of consumers are diminished, when the consumers' ability to choose media, content, time and place increases and media gets diversified. Media currencies are built for traditional media, but a radical transformation towards the digitalisation of the production, distribution and consumption of media across different platforms has recently been observed. Media brands are becoming inter-/crossmedial, which means that media sellers and buyers, as well as content producers, must command a wider range of channels and platforms, special characteristics thereof, and target audiences. At the same time, advertising revenue – which is often the cornerstone for making profitable media business – is gradually shifting from traditional to online media.

“Crossmedia currency should help media buyers to perform media planning in a single planning software in a holistic, simple and effective way... [and] help media providers to understand how their content is used across all platforms, in a holistic, simple and effective way.” (Member of the project consortium)

Intermedia currencies have been and are being built internationally, since they are considered a prerequisite for an industry that has such a high dependence on advertising revenue. Finland's neighbouring countries – Sweden and Norway – have launched or are on the verge of launching national intermedia currencies, 'TouchPoints' surveys. Denmark has also launched its own intermedia currency, 'Multi Media Mennesket'. However, building an intermedia currency with the research methods which are currently available is considered too costly and too slow in such a small country as Finland. International efforts are still not considered automated enough to bring cost-efficiency to consumer intermedia use monitoring, and thus are not applicable to the Finnish markets.

1.2 Scope of the Research

The objective of MOBIME for the first two years is to examine the current state of media currency and survey data in Finland, and how to reach comparability among them. The reason for building exchange rates or an intermedia currency is to find better measures for cross-media advertising impact and effectiveness. Our task is to investigate whether a single intermedia currency can be achieved and how it can be accomplished, or whether exchange rates between currencies will be developed. This will be done by examining the quality and quantity of current media data, examining what harmonisation needs exist in media data and what the business model for building the end product is. These steps will serve as the groundwork for deciding which data integration or fusion strategies to implement, and for demonstrating an on-demand and

user-friendly reporting and visualisation system. One important goal of the project is to create national know-how about merging media data.

The development of exchange rates or an intermedia currency by data integration strategies and a reporting system will be executed by VTT Technical Research Centre of Finland. The work begins with existing media currencies that have been built for traditional media, and our aim is to develop this base so as to enable the integration of new media currencies in the years to come.

Research question 1 (for 2011): What extent of comparability between media currencies and surveys can be achieved?

This includes:

- Researching the amount and level of currently available data and what analyses can be made from the data
- Deciding what data integration strategy/strategies is/are best suited for our purposes and execute a pilot test
- Developing a business model for the end product
- Demonstrating an on-demand and user-friendly reporting and visualisation system

Another important objective during the second year of the MOBIME research project is to enhance understanding on the impact of advertising and the role of media in marketing communications, by monitoring everyday media use and user experience thereof. This objective will be further concretised at the beginning of 2011 by Aalto University School of Economics.

Research question 2 (for 2011): How can everyday media use be monitored?

A third objective that was set at the beginning of the MOBIME research project in 2010 – building a tool for automatic or semi-automatic mobile data acquisition – has been postponed and will begin once the data integration work has been executed. During the first year of the project a common understanding was made that the above two project objectives are of top priority. This work will be executed by VTT Technical Research Centre of Finland in the coming years.

Research question 3 (from 2012 onwards): How can we build a cost-efficient tool for automatic or semi-automatic mobile data acquisition that will bring qualitative elements to media surveys?

1.3 The Roles and Competencies of Project Partners

Finnpanel Oy measures TV viewing and radio listening. The purpose of its research is to monitor the trends of TV and radio consumption in households and by individuals. Finnpanel contributes to MOBIME with its know-how and expertise relating to sampling, data collection methods and handling of large data sets. Finnpanel can also provide the project with test data.

The Finnish Newspapers Association is a branch organisation of 147 newspapers publishers, which are publishing 190 newspapers and 46 urban and pick-up papers. Almost all of the 236 paper products are multimedia. The main task of the association is to improve the facilities for and competitiveness of newspapers so that they will continue to be a leading medium in Finland. The association contributes to MOBIME with its know-how and expertise relating to newspapers. Its point of focus in the MOBIME research project is to better understand changes in media usage and consumer behaviour, and to get more information on media brands, in particular on multimedia newspaper brands.

TNS is the world's largest custom market research company operating in 80 countries. TNS is part of WPP's information, insight and consultancy division the Kantar Group. In Finland TNS Gallup operates in three business areas – Media, Consumer&Retail and Social&Business. TNS Gallup has long experience of media usage and consumer surveys bringing its expertise for creating the whole survey process - sampling, questionnaires, data collection methods, data fusions, data management and advanced reporting system. TNS Gallup can also provide the project with the test data.

Nelonen Media is a commercial broadcasting company, operating in television, radio and online. Nelonen Media has three free-to-air channels, three pay-tv channels and two commercial radio channels. Online services consist of the TV and radio brand sites and the online TV-service, ruutu.fi. Nelonen Media is part of Sanoma Entertainment, a Sanoma Group division. Nelonen Media offers expertise knowledge on how media and cross-media solutions are measured and marketed from a media sales house point of view. Nelonen Media also provides user knowledge of Finnpanel products, TAM (TV audience measurement) and National Radio Survey and TNS Gallup's marketing, planning and strategic media survey, TNS Atlas.

Dagmar is the leading media agency in Finland, serving local and international advertisers in marketing communications planning: media strategies, planning and buying, campaign surveys and consumer research. Dagmar's goal is to blaze the trail

in the industry. Long term development, continuous learning and improvement are crucial. To Mobime project Dagmar contributes holistic and media neutral know-how, expertise and long time user experience of media surveys. Several years' work with advertisers and different media sets up the base of understanding the media and consumer survey needs for the future. Dagmar's focus is to being involved in developing new planning tools to help advertisers to make better and more holistic media decisions and in order to improve ROI of marketing communications.

2 Methods

2.1 MOBIME Steering Group Board Meetings

During the first year the project steering group had in total four management board meetings: three meetings discussing the aims, objectives, progression, and next steps of the project; and one data integration workshop.

The project consortium parties were asked to introduce their viewpoints on the objectives and research questions which had been set for the first year, which guided our work in the management board meetings. The list of objectives and questions established at the outset of MOBIME included:

- What are the strengths of each media on different platforms (both quantitative and qualitative metrics)?
- How can project research results be used for media to be able to better serve both consumers and advertisers?
- What is the impact of different media?
- What media is the most effective and when? E.g. in different stages of consumer purchasing process, brand building, etc.
- How can cross-media effectiveness be compared?
- How can it be ensured that the research needs of all media are covered when selecting target groups and executing data collection?
- Is it possible to examine cross-media usage to the same degree of precision as in existing media currencies using one sample?
- Is it possible to create added value by merging/integrating different existing data sets? What kind of synergy is there?
- What would the new planning standard and practical planning system be for the end-user? By using existing analysis software or building a new one?

- What are the appropriate methodology, research period, and frequency of reporting suited to our purposes?
- Is it possible to produce a comprehensive view for a media company on the coverage of its different channels?
- How do consumers differ in their daily use of media and how does media usage affect their purchasing behaviour?
- What is the joint effect and value chain of different media in consumer purchasing decision-making and how can this information be effectively used in marketing?

A data integration workshop was initiated to find answers to the following questions:

- What are the expectations and objectives for media currency data integration?
- What are the idiosyncrasies of existing currencies and mutual interfaces to other currencies?
- What are the roles and competencies of each party to the project consortium in the integration process?
- What knowledge of international cross-media projects can be benchmarked?
- What expectations should there be as to the depth and extent of intermedia currency coverage?
- What are the demands of consensus/listing of open questions related to building one common integrated database?
- What opportunities and threats are presented by media currency data integration?

2.2 Interviews of Industrial representatives

The main objective of interviewing industrial representatives was to identify the needs of the media industry value network (i.e. media houses, media agencies, advertisers, research agencies) when building a comparative media currency for all media. Interviewees were responsible in their respective organisations for media sales/buying and/or people who used media surveys regularly in their occupations. The list of interviewees can be found in Appendix A.

A semi-structured interviewing method, a focussed interview, was used. In focussed interviews, the interviewing themes are set in advance for all interviews, although there might be variations in the actual questions and the order in which they are asked. Interviews lasted from one to one and a half hours, during which interviewees were asked to elaborate on the following themes of interests:

- What opportunities and benefits would an intermedia currency offer to the different players in the value network?
- What kind of threats would an intermedia survey have?
- What are the strengths and weaknesses of existing media currencies?
- What would be the strengths and weaknesses of an intermedia level currency?
- What kind of information in respect to media use is lacking in different planning approaches?
- What kind of information is needed from an intermedia-level survey?
- How is it possible to combine different media surveys, each of which has its own strengths and weaknesses?
- What would the survey have to be like to be able to benefit all parties utilising it?
- What is important in making media sales and buying more cost-efficient?
- What additional properties are needed in the data processing planning systems?
- What would be the ideal with regard to survey data if anything was possible?
- What are the relevant international examples to be benchmarked?

3 Findings

The first chapter will summarise the discussions had and decisions taken during the management board meeting and workshops. The second chapter highlights the main findings of the industrial representative interviews that were conducted in spring 2010.

3.1 MOBIME Steering Group

“There is a need for crossmedia measurement, to complement single media currencies. There is a need for a time-budget crossmedia study, but also for combining data from different sources in a clever and reliable way. Media houses offer their content on many platforms and are interested in getting figures for net reach and gross impact across all platforms. But, crossmedia measurement (single source) cannot be done with a very detailed focus on each single media (compared to single media currencies), compromises have to be made. And, vice versa, single media currencies have to be developed to better cope with questions relating to the consumption of single content on different platforms. ... The most important issue is to measure the use of a single content from different platforms: is it possible to perform a crossmedia analysis using the same kind of framework that existing TV and/or radio currency is utilising?”

During the first year’s management board meetings the tasks, aims and objectives of the research project were negotiated and clarified. We will now discuss some of the key findings that were discussed and agreed upon.

The first milestone to be accomplished was to examine the current state of the Finnish media currencies/surveys and their comparability. This phase of the project was seen as a prerequisite for being able to merge media currencies with different data integration strategies. The key question to be answered was: what is the need? Is it possible to merge existing media currencies? What are the joint interfaces? What is the output of existing media currencies and what elements do they lack? Our interest lay in

discovering whether currencies that lack important elements could be enriched with data from other currencies. For example, could merging two currencies provide new background variables for existing currencies and their planning software? Integrating data or databases was seen as a future possibility to avoid overlapping or unnecessary data collection in separate surveys.

A proposed objective for MOBIME was to generate policies, practices and tests for the Finnish media market in making data integrations. It was acknowledged that there were only a few cases in which data integration had been tested or executed in the Finnish media markets. Both parties with such knowhow, Finnpanel and TNS Gallup, are present in the MOBIME steering committee. A pilot test was agreed to be executed between two or more existing currencies. In order to be able to examine the status of the currencies and to perform a pilot test with data integration strategies, samples were sent to VTT of the descriptions of existing databases (see Chapter 6, Fusion Strategies).

Another important milestone to be accomplished is to examine the possible content of an intermedia survey that would make it useful for all parties – enriching their own media currencies and bringing deeper insight into their respective medium. Two different paths in respect to this project were presented. On the one hand, tactical planning is closely related to existing media currencies and their planning software tools, and on the other, strategic planning would require more cross-media data. Following these distinctions two objectives were set to be clarified:

1. Can existing currencies used in tactical planning be enriched with new data from other currencies and data collection systems (having compatible and comparative elements such as common target group definitions in each currency)?
2. What form would a tool for more general intermedia strategic planning take?

Building comparative elements in existing currencies would most likely be the simplest and least expensive way to proceed, and would facilitate tactical intramedia level planning. It was unanimously agreed that existing media currencies have been and will continue to be important elements in tactical media planning, since they entail a great deal of explicit data on different media. A prerequisite is that each media individually produces tactical data to serve media planning in the future. It is also general practice in other markets that intermedia currencies operate alongside existing intramedia currencies. The objective of our work is not to replace existing currencies, but to create the necessary conditions for being able to determine the connections between them; i.e. to build exchange rates for media currencies. Data integration diminishes the

explicitness of intramedia level currencies to a degree that the parties involved are not willing to replace them with a single merged database survey.

The production of a strategic level intermedia survey would serve all media. The goal is to innovate and extend the more general cross-media data to serve strategic planning. During this project we will make decisions relating to whether a tool for strategic planning will be founded from the basis of existing currencies utilising data integration strategies, or whether a completely new approach will be developed. Following the first approach – merging existing currencies and enriching data using new data collection systems – would require a mutual agreement as to which of the existing currencies or surveys would function as the “roof” or “hub” survey to all other currencies. One existing currency/survey could be chosen and further developed into a hub survey, into which all existing currencies and data from new data collection systems are merged. Another alternative would be to create a cross-media hub survey using new data collection techniques, as has been done for example in the UK and Denmark (see Chapter 5, ‘Benchmarking IPA TouchPoints’). It has already been presented that building fixed variables from the hub survey to other surveys in order to compare currencies could be the most effective and cost-efficient way in which to proceed. Fixed variables are a common practice used in other international cross-media surveys (e.g. IPA TouchPoints). The process is such that every media currency will be added jointly agreed elements that function as the fixed variables in merging currencies to one another. Our objective is to “find a simple way to compare impacts from different medias [pienin mahdollinen nimitäjä]; this could perhaps be ‘time spent’ or ‘reach’”.

A key issue in building an intermedia currency is that existing media currencies are updated in different cycles. For example, the TV Audience Measurement has a continuous 24-hour measurement and a daily reporting cycle, Outdoor Impact is a static modeling that was executed in 2006, and the National Readership Survey has a twice a year frequency of reporting. During the years to come a common agreement must be made as to whether an intermedia currency requires continuous updates (the most expensive alternative), or whether it can provide yearly updates on measures/probabilities/algorithms that intramedia currencies can utilise following their own reporting cycles.

There are already two major surveys in the Finnish media markets measuring consumer behaviour (the National Readership Survey and TNS Atlas). It was therefore suggested that markets could be unwilling to invest in new research data. Willingness to pay more could be increased if users could integrate their own databases or proprietary tools to build a more comprehensive picture of their company, clients and brands; i.e., by being able to add specific questions or target group specifications to the hub survey and

currencies. However, it was seen that even then it might not generate a sufficient amount of revenue to encourage the development of a new survey. In these circumstances it was presented that an integrated database should be built on the basis of existing currencies and surveys with data integration strategies.

In building an intermedia currency based on data integration strategies, the tool for data collection to enrich the hub survey results could follow the approach presented in the scope of this research – a mobile automatic or semi-automatic data collection system to collect information on consumers’ ‘media day’. It was acknowledged that the area of interest in media surveys is increasingly consumers under 35 years of age, whose consumer behaviour and media use differs greatly when compared to the total population. As such, data collection techniques should progress to match up with the change in consumer behaviour. Similarly, building a tool for data collection should tightly follow the strategic development areas of each media currency. However, differing viewpoints were presented:

“It is state-of-the-art to build a tool for mobile data acquisition, but it is not realistic to think it would work as an all-inclusive solution in generating a cross-media currency... We have experiences in building different kinds of applications for data collection. So far we have learned that modern data acquisition methods do not function by themselves as the basis for a cross-media currency, but they can be offered as a convenient alternative for individuals in the sample, together with the more traditional data collection methods.”

Even if hopes and motives are high, a possible project outcome may well be that all existing media currencies could not be merged. Investments could be too high, interfaces too different, fixed variables are impossible to build, or inability to negotiate the win-win terms of cooperation could lead to a situation of having multiple integrated databases instead of one database with all currencies. In that case a completely new approach would have to be developed to build an intermedia currency. Based on expert opinions resulting from our steering group board meetings, such an alternative would require the most resources, and a mobile data collection system would not be sufficient and would lead to an expensive multi-platform data collection method. Looking at the international markets (such as the UK), there is, however, proof that the integration of media currencies is possible. It is important to keep in mind that no survey is all-inclusive but has its limitations. It is a tool for people making decisions.

“Currently each medium is planned using its own rules and conventions. For example...outdoor is planned through packages of panels by outdoor contractor and radio is planned by allocating spots to time bands by radio station...”

However it is important to remember that although the planning inputs may be different by media (i.e. numbers of — insertions/panels/TVRs/spots/admissions) each input type can be outputted as common measurements of GRPs and coverage and frequency for each medium. These results can then be combined to show total GRP's and coverage and frequency across all media channels.”⁸

Existing media currencies are financed by groups of principals who expect for returning benefits when giving up data that has major commercial value. All parties must be satisfied with the level of enrichment of their own currency in the process of building a merged currency. At the same time, the depth of existing currencies is highly diverse. Similarly, data from each media currency are being processed in their own data processing systems, and the question remains as to which to use when data is merged.

3.1.1 Key questions to be Resolved in the MOBIME Research Project

“In order to build some sort of merged database, it means that every single party around this table must get the feeling that they are a winner. If anyone thinks that they are going to be in a worse position than before, they will not participate in the fusion, and the whole thing collapses. No one can force us all to participate.”

During the first year some key questions were presented, which must be resolved in the coming years in order for this project to be a success. In order to resolve them, participating organisations must come to mutual understanding and agreements. Key questions to be resolved according to scope of this research can be found in Table 2.

⁸ <http://www.ipa.co.uk/Content/TouchPoints-Site-Using-the-TouchPoints-Channel-Planner>

Table 2: Key questions to be resolved in MOBIME from 2011 onwards.

Scope of research	Key questions to be solved
Building exchange rates for currencies or an intermedia currency	<ul style="list-style-type: none"> • What kind of media survey data exists? • What needs to be harmonised in media data to enable data integration? • Which can be achieved: an intermedia currency or exchange rates? • How can the strengths of each existing media currency be utilised? • What is the frequency of updating measures/probabilities/algorithms? • How will media outside existing currencies be considered? • What reforms in existing currencies need to be made to take into account the modified areas of media? • Under which circumstances are all parties satisfied to enable the creation of one single integrated database? • What is the extent/benefit for data/knowledge transfer among data owners? • If an existing currency/survey is chosen to be developed into a hub survey: <ul style="list-style-type: none"> ○ What are the conditions for a survey to be chosen for the hub? ○ How to develop it further? ○ What agreements must be made with data owner? ○ How to use it to enrich data in existing media currencies? • What is the data processing tool for the integrated database? • Who is (are) going to be the administrator(s) or owner(s) of the end product? • What is a “board” that determines e.g. the pricing of the end product? • What is the revenue sharing model? The business model? • How can the quality of the end product be verified and ensured?
Monitoring everyday media	<ul style="list-style-type: none"> • What are strategically the key issues to be measured? • How are they measured? • How are media impact and effectiveness compared, and how are they valued?
Building a tool for mobile data acquisition	<ul style="list-style-type: none"> • What are strategically the key issues to be measured? • How can an agreement be made between parties on measurement practices? • How can an agreement be made between parties on comparative elements? • How will new media be measured (e.g. social media, blogs)? • How can target groups be reached and how can data collection be executed in a manner that covers the survey needs of all media?

3.2 Interviews of Industrial Representatives

*“Looking at this from the point-of-view of **advertisers**, they are interested in understanding from where they get the best possible returns for their ad investments. Advertisers want to know what [media] is the most efficient and Where to put their money. Not only looking at contact prices or running after discounts, but really, what is the effectiveness or impact of different media, what can be achieved with X amount of money. Of course advertisers have differing needs setting different objectives for media, but the main point here is the effectiveness of different media and how to prove it. What is the effectiveness of advertisements in each channel? Advertisers face different market forces and varying degrees of competition, and their marketing objectives differ, but they all need to understand better what to do in the circumstances they face in order to be able to sell their products and services, whatever their long- or short-term objectives may be. This is the key question we are trying to resolve. ...The aim of an intermedia currency is to provide advertisers and their partners with the necessary tools to optimise their media mix so that the effectiveness of their marketing communication is maximised.”*

*“From the point-of-view of the **media** the main issue here is to prove to advertisers how some other qualities [e.g. media environment, frequency of publication, user experience] bring added value to media space, rather than looking solely at contact prices or discounts. We need to identify which elements can be associated with different media that are meaningful to advertisers that more or less only think of money when making these decisions... Context is important. Media is more than just a channel. There are elements of media that are transmitted to the marketing message – what is the significance of the Net Reach for a media, or is it just a nice number? Does it have any value if we get the same NRP for an outdoor campaign and a TV campaign if these other qualities associated with the media have an entirely different impact to actual sales? Most media currencies today only provide – more or less – figures on media coverage.”*

One key objective in building a tool for tactical planning is to examine whether calculatory comparability between media is achievable. It means that media currency integration should enable intermedia comparison by having common measurements (e.g. GRP, coverage, and/or frequency) and giving weights to each media based on the measurement of contact in each media currency (enabling the measurement of contact in one medium against contact in another medium). Based on our interviews, comparability metrics should take into account the differences in temporal effectiveness

between media (e.g. MPX in printed media). Lining up media in this respect will flatten the ‘depth’ and richness of each media. As such, metrics for qualitative attributes are sought after.

“Advertisers always buy contacts – readers, watchers, listeners... The challenge is that printed media have pages, while TV and radio have seconds. You cannot really compare seconds to pages, but you have to, it’s something like 30-seconds to a page... It’s going to be really difficult to get a commensurate currency that’s not going to flatten the media.”

Based on our interviews, media markets need a deeper insight into the roles of different media in consumers’ purchasing processes. In what platforms is media strong, based on evidence not only from quantitative, but also qualitative metrics? It is in the interest of media to be in the right place, at the right time, with the right content, and to be able to pass along marketers’ messages – the source of their income. New media channels have emerged alongside traditional media, having a strong impact on consumers’ purchase decision-making. Marketing messages carry on from traditional media to complimentary viral marketing channels, such as social media services or blogs. However, existing media currencies still measure to a large extent only traditional media. An important objective of the MOBIME research project is to develop an intermedia level survey that is not obsolete from the very beginning.

“We have an excess amount of information [on different media]. We don’t lack information, but is it the right kind of information? The problem is that we are not capable of using all the information we have. For example, media houses don’t know the actual impact of their media, since they don’t get that information from advertisers or media agencies. I think we should dig deeper.”

“The existing tools [media currencies] are the basis for us to justify the success of a campaign, but they only give us theoretical figures that we could have reached X amount of consumers. Of course, the first objective is to reach a consumer. I have faith in the existing currencies that they probably give a reasonably fair picture as to whether or not consumers are actually going to encounter our ads or not. However, they don’t tell us if we were able to create the desired effects that were set for the campaign. ...Advertisers are only interested in knowing what ultimately makes a consumer buy a product; how to be present in that specific situation where media is consumed and where purchase decisions are being made. ...Media surveys are still technology-centric. But what we really want to know is how to reach consumers depending on where they are and what mood they are in.”

A common issue for all interviewees was how to gain a deeper understanding of consumers' use of time in respect to media use. An equally important perspective is to elaborate the motives behind and manners of media use. A central issue in better understanding the roles of different media in consumers' everyday lives is that media use varies from one type of media to another – reading is a different user experience than watching, or listening. Furthermore, media experience is tightly bound to each individual's personal traits as well as to the platform from which the media is consumed, leading to a need for better understanding of intramedia-level use. These questions are important in order for media to be able to better serve both consumers and advertisers.

“We [media] are no longer thinking about what kind of newspapers to produce, or what the paper is going to be printed on, but what kind of media brands we are going to distribute in the future, how the brand will develop in different channels and in different target groups.”

A common viewpoint that was raised dealt with the issue of taking the consumer to the core of all media research activity. This shift in focus is needed from looking at the relationship between the media and its target audience in “silos” to gain a common understanding about how different media are present in consumers' lives. The general practice of performing research from the perspective of the media, not the consumer, was considered to be one of the main reasons why current studies offer to a large extent quantitative and not qualitative research results. Studying media use from the perspective of consumers would offer more depth to media surveys.

“Historically, too much emphasis has been placed on looking at the media from the perspective of media silos. But for advertisers, marketing communications or advertising is one single entity. Because of the current situation they are forced to look at this through separate pipelines. There are no silos in the world of making marketing campaigns. A person may encounter a marketer's message but they're certainly not going to remember where this encounter was made.”

“An ideal world of media surveys would be based on actual use – the consumer's media day would be sliced into real-time episodes, paths, media touch points. ...we have to start from information seeking activity, looking at consumers' processes: how people process information, what their decision-making processes are. In other words, we have to start by looking at information-seeking processes, not with the media itself. If a consumer is facing a purchase decision, we need to understand which is more important: quality of information, or from where it is received.”

The role of media is to offer consumers a point of encounter, but the fundamental issue that was raised in interviews is that a better understanding is required as to how consumers interpret and interact with media in the situations they are in, and how they remember or value those encounters later on. What is the role of media for a consumer in a specific circumstance? A great deal of aspects related to consumer behaviour and psychology were raised. Argumentations were based on notions that consumers' interpretation of media is situational, affected by the emotional states they are in, their values, attitudes, interests and motives, and that media experiences differ from the memory traces they leave behind (i.e. are related to short- and long-term memory). Relevant to this discussion was the question of whether media use can be explained by motives, or whether it is context-sensitive.

“Demographics don’t help us to predict what consumers perceive as a phenomenal experience. However, if we could gain more understanding as to in what contexts these experiences are born, and what kind of things are good experiences, this would help us in that our aim would no longer be what it has been strongly in the past – to slice consumers into target segments and offer them segmented services – but to improve the findability of our contents. In this way, our services would clearly state to consumers what is on offer for certain emotional states or motives. We need more understanding on how people perceive media contents and how they separate them in different circumstances: ‘I want this, and I don’t want that’.”

A common subject in respect to the impact of advertising was the issue of having the right approach for consumer contact in each media, to increase the accuracy of the aim of the media. Intermedia metrics for giving factual evidence on the effectiveness of marketing and advertising activity was in general focus. The situational factors in marketing communications and advertising were raised on several occasions. However, as presented by one interviewee, building a tool that could give the answer to everything is beyond the scope of this research project.

“We are discussing the development of a tool for tactical planning, but there are only case-by-case and situative circumstances for every advertiser, brand, industry... Advertisers may have certain objectives for one campaign, and other objectives for other campaigns. I believe it’s complete utopia if we believe we are able to construct a system that will give us answers to every single situation. But if we are able to build some sort of generic database that embodies enough information from all sorts of things, and leave a certain degree of freedom to marketing planners who, after all, know what is being sought after. We are not

able to build an all-inclusive system that gives answers to everything. Planners will in any case have a major role, since every planning process is unique.”

Table 3: Summary of topics and subject areas that were raised in interviews.

TOPIC	Subject Area
Roles of different media	<ul style="list-style-type: none"> • Special characteristics and “depth” of media (inter and intra) • The roles and touch points of media in consumers’ everyday life • The effects of different media on consumers • How the relationship is built between media and consumer • Perceived value and quality of contact consumer • Owned vs. paid vs. earned media
Commensurate currencies	<ul style="list-style-type: none"> • Calculatory comparability and weights of ad space in different media • Media overlap • Decreasing subjectivity in media planning • Metrics for qualitative attributes • Price/quality ratio per media
Consumer behaviour	<ul style="list-style-type: none"> • Purchase behaviour processes and media touch points/impact at each stage • Consumers’ media day and the state of mind encountering media • State of mind making purchase decisions • Value of information seeking and retrieval in respect of different media and different consumer segments • Media use motives for different consumer segments in different settings (e.g. relaxation, information search, spending time...) • How consumers encounter and experience advertisements in media • Interaction between consumers and media <ul style="list-style-type: none"> ○ Behavioural psychology; human processes ○ Neuroscience (short-/long-term memory, subconsciousness) ○ Values, attitudes, interests, and motives guiding media use ○ Emotions in consumer behaviour; effective segments ○ State of mind, simultaneous activity, level of focus in media use ○ Causation of impact pathways, WOM ○ Context-sensitiveness vs. motives in media use
Media impact	<ul style="list-style-type: none"> • Going beyond media encounter to long-term media impact • Different temporal effectiveness of different media (inter and intra) • The role of content and media environment in media impact
Marketing and advertising impact	<ul style="list-style-type: none"> • Advertisers’ increased accuracy of aim • Metrics for intermedia marketing ROI, effectiveness • Role of ads in media usage and information seeking activity • Different ad objectives (tactic vs. strategic) of advertisers, brands, industries • Elements in advertising that create memory traces • Metrics for guiding creative solutions and tailoring

4 Synopsis of Existing Media Currencies and Surveys

This chapter will summarise the basic facts about national currencies and surveys to pinpoint the differences in sampling, methodologies and the frequency of reporting. A more profound review of the surveys is presented in Chapter 6.1, ‘Media survey data’.

Table 4: The National Readership Survey (NRS)

	The National Readership Survey, NRS Reader (KMT Lukija)
Official currency	Readerships of publications (thousands of readers an average issue of each publication)
Measured media	Around 190 national and 250 regional publications. Open for all publications published at least four times a year.
Sampling [suom. otanta]	Two-phase stratified random sampling. Sampling based on municipals of Finland.
Sample [suom. otos]	Finnish- and Swedish-speaking population, aged 12+, living in continental Finland
Sources of sample	97 % from Population Register Centre and 3 % company mobile sample
Annual Sample Size	24,000 (from Spring 2010)
Data collection method	Computer-assisted telephone interview (CATI)
Frequency of reporting	Twice a year on a continuous basis one year at a time.
Survey data owner	The Finnish Audit Bureau of Circulations (Levikintarkastus Oy)
Eligible subscribers	Subscribers are mainly publishers and media agencies that finance the JIC (Joint Industry Committee) research. Research data is, however, open to anyone to subscribe
Tool for data processing	NettiKMT, MediaPlanner

Table 5: TV Audience Measurement (TAM)

	TV Audience Measurement (TV-mittaritutkimus)
Official currency	Viewing figures for programmes, breaks and spots; reach and frequency figures for campaigns
Measured media	In total 70-80 TV channels, including cable channels
Sampling [suom. otanta]	Random sampling, representing TV households in Finland
Sample [suom. otos]	Residents aged 4+ in TV households
Sources of sample	Population Register Centre
Annual Sample Size	Panel size: 1,100 TV households (about 2,300 people)
Data collection method	People meter data. Households on the panel are equipped with metering devices to monitor changes in set status and viewer appearance.
Frequency of reporting	Continuous 24-hour measurement of in-home viewing. Meter data is collected daily and reports from previous day's viewing are published at 7 am
Survey data owner	Finnpanel Oy
Eligible subscribers	TAM data can be subscribed by paying a licence fee. Different customer groups are offered customized access rights with diverse listing of prices.
Tool for data processing	Arianna, AdvantEdge, and TV stations' internal processing systems

Table 6: The National Radio Listening Survey (KRT)

	The National Radio Listening Survey (Kansallinen Radiotutkimus, KRT)
Official currency	Listening figures for quarter-hours and longer time bands; reach and frequency figures for campaigns
Measured media	Practically all Finnish radio stations
Sampling [suom. otanta]	Random sampling, using quotas for municipals, sex and age groups.
Sample [suom. otos]	Finnish- and Swedish-speaking population, aged 9+, living in continental Finland
Sources of sample	Population Register Centre
Annual Sample Size	18.000 persons
Data collection method	Diaries. Respondents mark their radio listening by drawing a line to the diary that identifies the station and listening time, as well as the place of listening in 15 min. slots.

Frequency of reporting	A 7-day study wave every month. Periods are selected at random and are confidential. There are 12 waves each year. Reporting is carried out evenly throughout the year.
Survey data owner	Finnpanel Oy
Eligible subscribers	KRT data can be subscribed by paying a licence fee. Different customer groups are offered customized access rights with diverse listing of prices.
Tool for data processing	Telmar RBP and CrossTab, KRTOOnLine

Table 7: Outdoor Impact

Outdoor Impact	
Official currency	VAC, Visibility Adjusted Contact = Number of passages that result in actual contact with the panel ("eyes on"). Flow > OTS > VAC. Audience coverage and frequency.
Measured media	Eurosize (Atribus, Adshel), urban and non-urban billboards, pillars/columns, buses, trams, metro stations, city backlight, lamp post panels. 35,000 classified pictures of panels recorded at the launch.
Sampling [suom. otanta]	Travel Survey, Traffic Flows, Visibility Study, and Panel Classification. Travel survey sampling based on quotas for sex, age and Coverage Model Working Areas (Statistics Finland)
Sample [suom. otos]	Finnish speaking population, aged 12-74, living in continental Finland (Travel survey)
Sources of sample	Visibility study conducted in the UK. Traffic counts from municipalities' traffic planning offices, the Finnish Transport Agency, instances administrating railway and underground stations, Finnish Council of Shopping Centres, and A.C. Nielsen.
Annual Sample Size	None. 2,300 (Travel Survey) done in 2004. Panel classifications and traffic flows are updated continuously.
Data collection method	Travel Survey: computer-assisted personal interview (CAPI), using computer generated mapping systems. Frequency of usage to low penetration venues collected by questionnaires. Visibility Study: eye movement tracking systems. Classification: gathered by outdoor media companies and rated using international classifications.
Frequency of reporting	Static modelling executed in 2006. Travel Survey conducted by TNS Gallup in 2004. Visibility Studies conducted by Birbeck University in the UK in the 1990s.
Survey data owner	JCDecaux Finland and Clear Channel through the Outdoor Association, Outdoor Finland

Eligible subscribers	Media agencies (free of charge)
Tool for data processing	CAFAS (Cover And Frequency Audience System)

Table 8: TNS Atlas

TNS Atlas	
Official currency	Not an official currency. A cross-media survey. Data on e.g. intermedia use and motives, places of purchase, purchase behaviour, lifestyle, leisure time interests, hobbies, financial situation, use of money, values and attitudes (RISC)
Measured media	A tool for brand marketing, distribution channel marketing, marketing communication and strategic media planning. Incl. 800 media brands, 100 product categories, and 1,300 brands (consumer goods, durables, points-of-purchase and retail chains)
Sampling [suom. otanta]	Random sampling from internet panel. Sampling with a 60 cell matrix based on quotas for residence, age, sex and language.
Sample [suom. otos]	Finnish- and Swedish-speaking population, aged 15-69, living in continental Finland (10+ before 2010)
Sources of sample	TNS Gallup Forum internet panel with annual sample size of 50,000.
Annual Sample Size	20,000 – 40,000 depending on the subject in question.
Data collection method	Internet panel (before 2010 telephone interviews and postal questionnaires). Data collection in four waves. Data collection continuously 12 months a year. Single source survey, one source, many use ranges. A modular survey.
Frequency of reporting	Every month, quarter, six months, three quarters, or year.
Survey data owner	TNS Gallup
Eligible subscribers	Open to anyone to subscribe
Tool for data processing	MediaPlanner

Table 9: TNS Metrix

TNS Metrix	
Official currency	Not an official currency. On-line audience measurement tool. Units of measurement: unique visitors, unique browsers, visits, page impressions, frequency, time spent on site
Measured media	Around 250 online media sites.
Sampling [suom. otanta]	Not sampling. Full information retrieval; all visitors.
Sample [suom. otos]	Page views and visitors in one week.
Sources of sample	Page views and unique visitors of 250 online media sites.
Annual Sample Size	Total
Data collection method	Browser based measuring system (site-centric). Following criteria set by international audit bureaus of circulation and recommendations set by IAB Finland.
Frequency of reporting	Verified numbers for Finnish online media sites every week.
Survey data owner	TNS Gallup
Eligible subscribers	Open to everyone to subscribe
Tool for data processing	Online

5 Benchmarking IPA TouchPoints

The objective of the MOBIME research project is to develop new and innovative approaches to data collection techniques and reporting systems. IPA TouchPoints is an acknowledged international crossmedia survey. The development of the survey took over two years, with total investments rising to over one million pounds⁹. It is not our objective to duplicate IPA TouchPoints, but to develop a new and more cost-efficient intermedia survey providing qualitative data about the roles of media in consumers' lives using innovative data collection and reporting systems. In these efforts, benchmarking IPA TouchPoints is a good starting point.

“IPA TouchPoints arose out of the need felt by agencies for a multi-media planning tool, which would enable them to produce more realistic media strategies and plans...to provide insights into how people use all media...[including] new media...”¹⁰ We can look at which media are consumed and when they are consumed — across the day/week. We can investigate how different sections of the target market use and respond to each medium. Through these analyses we can begin to develop a clear understanding of target market’s relationships with media.”¹¹

“TouchPoints provides two distinct databases: the first, the Hub Survey, gives an unprecedented view of ‘a week in the life’ of consumer behaviour. Respondents record their activities for every waking half hour over a seven day period, giving a unique view of peoples’ daily lives and how their media usage fits into these patterns. The second database, the TouchPoints Channel Planner

⁹ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 ”Media ja Mainonta vuoteen 2013”. Opintomatkan raportti. Lontoo 9.-.13.6.2008. 32 s.

¹⁰ <http://www.ipa.co.uk/Content/TouchPoints-Site-What-is-it>

¹¹ <http://www.ipa.co.uk/Content/TouchPoints-Site-About-the-Hub-Survey>

is the only industry available, multimedia channel planner. It has been created by integrating the industry media currencies onto the Hub Survey.”¹²

IPA TouchPoints is a single source survey that combines different data sources (Figure 3), and a multi-channel planning system. The survey was initiated in 2005 in the UK with two prime objectives: 1) to be the first single source survey to serve all players in the media value network (marketers, media houses, media-, communication-, digital-, and ad-agencies) in the proliferating media- and consumer markets; and 2) to develop a single database that provides a holistic view on consumers’ use of time, media-use, and consumer behaviour. A holistic view of people’s ‘week in life’ was provided in giving answers to the following:¹³

- How consumers spend their time (e.g. shopping, working, travelling)
- Who they spend their time with (e.g. friends, family, work colleagues)
- What is important to them (e.g. time spent on activities, family values)
- What they believe in (e.g. views and opinions in life, brands, media, ads)
- What they are sensitive to and how
- When and where they can be effectively reached through media channels

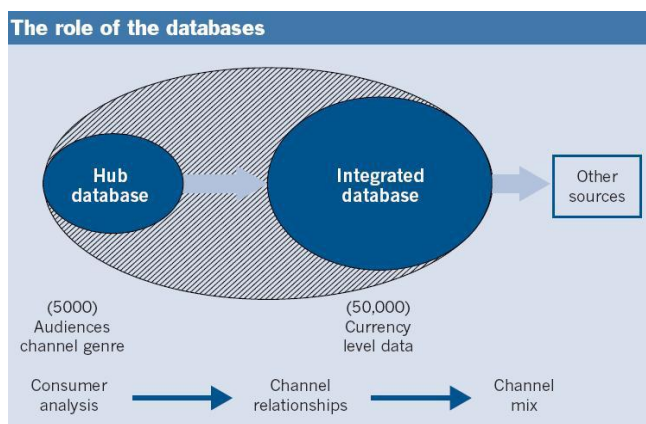


Figure 3: IPA TouchPoints Databases. The integrated planning database Channel Planner is used in media agencies in particular, and the Hub Survey among media owners.

The first round of data collection was executed from April to November 2005, and the sample was drawn from TNS Access Panels. The Hub Survey was based on a representative sample of 5,010 adults aged 15+, living in Great Britain. The return rate

¹² <http://www.ipa.co.uk/Content/TouchPoints-Site-What-is-it>

¹³ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 “Media ja Mainonta vuoteen 2013”. Opintomatkan raportti. Lontoo 9-13 June 2008, p.32.

was 64%. Respondents were sent a paper self-completion questionnaire (Figure 5) and they recorded their daily activities every half hour over a seven day period with PDA devices (Figure 4). Respondents received reminder calls before, during, and after the one week recording period. Similarly, a 24-hour service line was opened to answer any questions. During the data collection period over 8,000 e.Diary devices were sent out, of which 94% were retrieved by TNS Global. A pilot study had already been undertaken in 2004 to ensure that respondents understood how to use the PDA devices. The respondent incentive over the years has ranged from 20-25 pounds and a 2,500 pound prize draw.¹⁴

Initially, IPA TouchPoints had two sets of founders: 1) *the media owners* (AOL (UK) Ltd., BBC, Chrysalis Radio, JCDecaux, The Guardian, ITV, News International, smgACCESS, Tesco Media Service, and Wanadoo); and 2) *agencies* (Initiative, MediaCom, Mediaedge:cia, Media Planning Group, MindShare, OMD UK, PHD Media Ltd., Starcom MediaVest, Universal McCann, Vizeum, and Zenithoptimedia). The integration of the media currencies was executed by RSMB Research Ltd. The databases were developed by IMS, KMR, and Telmar. The first Hub Survey was launched in spring 2006.¹⁵ In spring 2008 IPA TouchPoints had around 50 subscribers. In October 2010 the subscriber pool was about the same size with 36 agencies, 12 media owners, and one advertiser¹⁶.

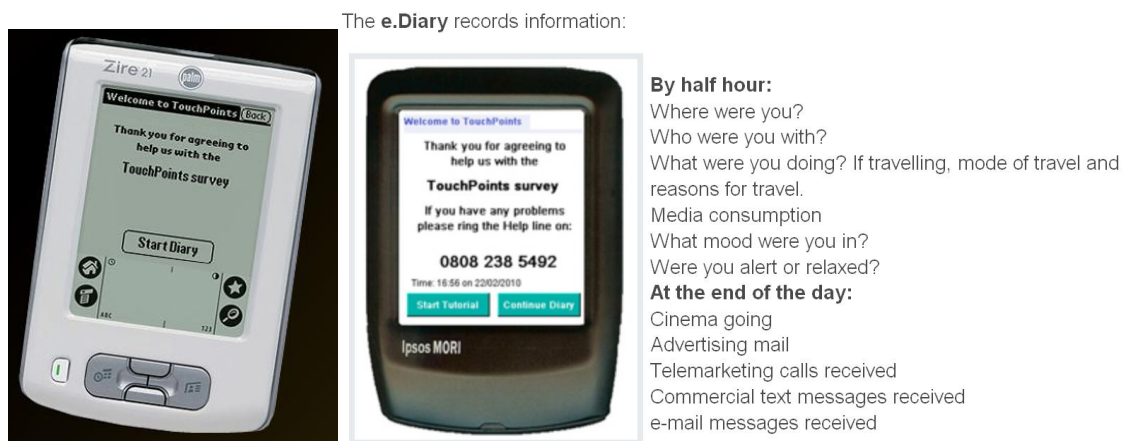


Figure 4: PDA devices and recorded information from the first and third round of data collection in IPA TouchPoints.

¹⁴ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 "Media ja Mainonta vuoteen 2013". Opintomatkan raportti. Lontoo 9-13 June 2008, p. 32, and www.ipatouchpoints.co.uk

¹⁵ Ibid.

¹⁶ <http://www.ipa.co.uk/Content/TouchPoints-list-of-subscribers>

The self completion questionnaire asks respondents for their attitudes and habits in the following areas:

Television
Radio
Press
Outdoor
Cinema
Online
SMS text and picture messaging
Event and broadcast sponsorship (selected events)
Direct Marketing
Word of Mouth
Technology Ownership
Lifestyles
Attitudes

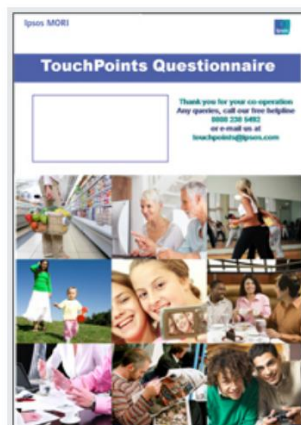


Figure 5: The self completion questionnaire covers consumers' attitudes, product ownership, shopping and media behaviour.

The starting point for IPA TouchPoints was to retain the existing six official media currencies (BARB, NRS, RAJAR, POSTAR, JICREG and CAVIAR). The circumstances in the UK were quite similar to the conditions in Finland at the time, with an unwillingness to let go of currencies because of their uniqueness, richness, and data trends. Media currencies were integrated to the Hub Survey (i.e. the database collected using e.Diary devices over a seven-day period) by firstly integrating the Hub Survey data to the demography data of BARB TV Establishment Survey (N=50,000) and secondly, to the other five official currencies. The TouchPoints Channel Planner was created by integrating media currencies to the Hub Survey. Personal contact probabilities were created for each individual in the Channel Planning database, based on the industry media currencies (or from the TouchPoints itself for those media that do not have media currencies), which enabled the calculation of coverage and frequencies for individual and combined media channels. Methods used in media currency data integration were dependent on the source materials. Media currencies integrated into the Hub Survey, the integration methods, and the datasets used in the first round were:¹⁷

- BARB – Television, using fusion (4 weeks ending 20 March 2005, BART Establishment Survey: 6 months ending June 2005)
- NRS – Magazines and national newspapers, using fusion (Y/E June 2005)
- RAJAR – Radio, using fusion (6 months ending June 2005)
- JICREG – Regional press, using profile matching
- POSTAR – Posters, using calibration (Y/E June 2006)

¹⁷ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 “Media ja Mainonta vuoteen 2013”. Opintomatkan raportti. Lontoo 9-13 June 2008, p. 32, and <http://www.ipa.co.uk/Content/TouchPoints-Site-Using-the-TouchPoints-Channel-Planner>

- CAVIAR – Cinema, using calibration (Y/E June 2005)
- Online and Search – using TouchPoints and probability calculations (50 websites, 38 website genres, 5 search engines, 27 product categories in 3rd round¹⁸)
- Direct mail – using TouchPoints and probability calculations
- SMS – using TouchPoints and probability calculations
- TGI – Product usage, using fusion

Similarly to the discussions in MOBIME, IPA TouchPoints has made the survey more engaging for subscribers by allowing users to integrate their own databases and proprietary tools in the TouchPoints databases. Survey users have utilised TouchPoints data in quantitative and qualitative surveys (such as customer satisfaction and tracking surveys), new product launches, CRM systems development, and in target market segmentation.¹⁹ Defining target markets in the Hub Survey is done by using (and combining) basic demographics (e.g. age, sex), geographics (i.e. ‘non-overlap TV regions’), geodemographics (with MOSAIC or ACORN), or then defining target groups based on a selection of questions (relating to attitudes, shopping habits, use of time, brands, media use, advertising, for example). All Hub Survey targeting options are available in the Channel Planner, except for one – targeting with media based filters. *“This is because the Hub Survey media data was replaced with currency level data in the Integrated Database. This is to avoid potential conflict between two media contact definitions and to ensure usage of the official currencies during schedule planning.”*²⁰

The second data collection period was undertaken from September 2007 to February 2008. The Hub Survey was based on a representative sample of around 5,000 adults aged 15+, living in Great Britain. The second round examined in more detail trends in digitalisation and consumption, as well as the increased popularity of social media services.²¹ The sample was drawn from RDD and TNS Access Panels.²²

The third and last data collection period was undertaken from September 2009 to February 2010. The Hub Survey was based on a representative sample of 6,050 adults aged 15+, living in Great Britain. The sample was drawn from NRS RAJAR Recontact

¹⁸ <http://www.ipa.co.uk/Content/TouchPoints-Site-Guidance-Note-Online-data>

¹⁹ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 “Media ja Mainonta vuoteen 2013”. Opintomatkan raportti. Lontoo 9-13 June 2008, p. 32.

²⁰ <http://www.ipa.co.uk/Content/TouchPoints-Site-About-the-Hub-Survey>

²¹ Bäck, A. & Viljakainen, A. 2008. VTT:n julkaisu 2450 “Media ja Mainonta vuoteen 2013”. Opintomatkan raportti. Lontoo 9-13 June 2008, p. 32.

²² <http://www.ipa.co.uk/Content/TouchPoints-Site-How-we-do-it>

Sample. Integration of the media currencies was executed by RSMG and the Hub Survey was developed by Ipsos Media CT. The methodology for expanding the Hub Survey and creating the TouchPoints Channel Planner had two stages:

“The first stage of the process is to expand the Hub survey onto the BARB Establishment Survey. This effectively creates an average of nine clones for every TouchPoints Hub Survey respondent, delivering an operational sample size of approximately 50,000. Whilst not increasing the effective sample size, the expansion allows all industry media currency respondents to be used in the integration process. This technique substantially strengthens the match of media research currencies to TouchPoints. Stage two involves ‘fusing’ media currency data onto the expanded 50,000 TouchPoints database. A series of hooks across the media are pre-defined within the self-completion and e.diary, these include demographic and household composition descriptors, but crucially also the media patterns of consumption. The combinations of these hooks allowed TouchPoints respondents to ‘receive’ media currency data from the most relevant currency respondents.”²³

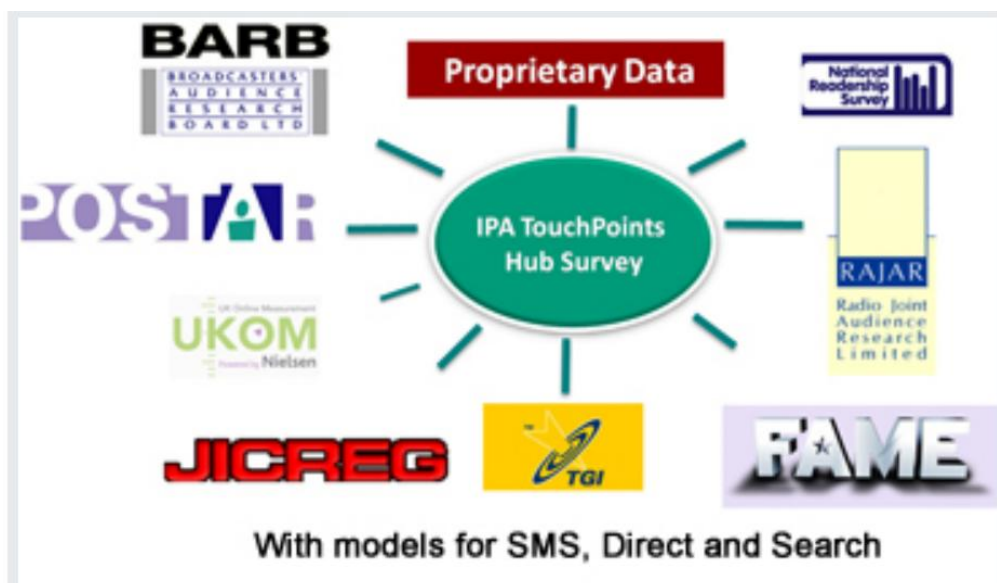


Figure 6: Media currencies in the IPA TouchPoints3 Databases: BARB (television), POSTAR (outdoor), JICREG (regional press), TGI (product usage), RAJAR (radio), NRS (national press), and FAME (launched in 2007 prev. titled CAVIAR, cinema). Online, search, direct, SMS and sponsorship do not have accepted media currencies, therefore the coverage and frequency calculations have been created on the basis of the Hub Survey questionnaire.

²³ <http://www.ipa.co.uk/Content/TouchPoints-Site-How-we-do-it>

6 Fusion Strategies

The goal of market research is to understand consumers' behaviour and to track the whole information chain that leads the consumer to purchase the actual product. Media use data are currently collected separately by different media survey organisations, each of which has its own databases, data collection and reporting practices. The overall image of media users cannot be clearly seen and therefore methods for fusing and enriching data have been developed.

One of the most important developments in market research is data fusion, which combines information from different data sources. The drivers of data fusion are:

- to enrich media use data with the data in possession of each partner, in order to gain a more comprehensive image of the media users;
- to get more comparable media value for advertisers – to better see the value of different types of media from the point of view of a certain product and target group;
- to share the costs for collecting data that the media survey organisations are missing – “soft values” like the quality of media use, phases of life and moods;
- to save on costs of overlapping work in data collection, management, analysis and reporting;
- to be able to jointly develop new tools and methods for data collection, analysis and report.

The enrichment of data means that the original content of a certain data element is combined with information from data from another data source. The simplest example of this is combining data from a survey with the known behaviour data of the respondents, e.g. combining data of the media usage survey with shop loyalty card data. This enables the possibility of creating a powerful combination of survey results and real behaviour data. It naturally requires access rights to the respondents' data.

Since known behaviour data is rarely available, the normal enrichment approach is to combine data from different surveys. The data are collected for different purposes, and can be partly overlapping and disparate. The collected data do not necessarily relate to the same individuals. This kind of fusion requires special processing and algorithms to guarantee that the fusion results still represent real life behaviour.

When planning and implementing data fusion of the different media research companies in Finland, several issues must be considered:

1. Technical issues. Is it possible to fuse the data from the existing databases? What kinds of tools are needed?
2. Statistical issues. What algorithms should be used in order to ensure the validity of the analysis based on the combined database?
3. Business issues. How does business based on combining databases owned by different companies work?
4. Legal issues. What legal challenges are faced when combining information from different databases that contain personal information?

This chapter concerns mainly technical issues. VTT has analysed the data contents of the media survey companies that are parties to this project. The data sources are introduced in Chapter 6.1 and the analysis results in Chapter 6.2. Chapter 6.3 briefly presents the basic data fusion methods. Chapter 6.4 introduces technical data fusion alternatives. Chapter 6.5 gives conclusions and recommendations.

6.1 Media survey data

The project studied material from the following media surveys:

- Finnpanel: TV Audience Measurement (TV-mittaritutkimus)
- Finnpanel: the National Radio Listening Survey (Kansallinen Radiotutkimus)
- TNS Atlas, a cross-media survey
- TNS Metrix for online media
- The National Readership Survey (NRS) for printed media (Kansallinen mediatutkimus, KMT).

The overviews given in the following sections introduce the main data contents and development needs. The information is gathered from the analysis of examples of data contents from Finnpanel and TNS Atlas, the companies' website contents, and the interviews performed during this project.

6.1.1 Finnpanel TV Audience Measurement

Finnpanel²⁴ TV Audience Measurement measures TV viewing. The objective is to monitor the trends of TV consumption in households and by individuals. An automatic measurement device monitors in-home viewing 24 hours per day. A long-term panel of households is in use.

The measurement produces detailed and versatile viewing information on programmes, breaks and advertising spots, as well as channel shares and viewing times for different target groups. The data are also used for media planning and campaign analysing purposes.

Data collection, reporting and analysis are done using the company's own tools. Reporting to subscribers include several data sets and deliveries throughout the day. Finnpanel also provides subscribers with analysis software. Some of the results are freely available on Finnpanel's website.

Mobime will not replace existing measurements and/or data, but rather will investigate whether it is possible and reasonable to enrich the existing data with data from other databases. Is it possible to fuse existing databases? What algorithms should be used, etc? Can we create a data set that can calculate the net reach and frequency for a campaign that uses both TV and radio? Or is it possible to create target groups created in the TNS Atlas survey, to be used in TV and/or radio data sets? Is it possible to use data from TNS Metrix to calculate the gross impact of campaigns using TV, radio and web-based services provided by the TV and radio stations?

²⁴ <http://www.finnpanel.fi>

6.1.2 Finnpanel National Radio Listening Survey

This research produces detailed and versatile listening information on a quarter-hour basis, as well as channel shares and listening times for different target groups. The data are also used for media planning and campaign analysing purposes.

Data collection, reporting and analysis are done using the company's own tools. Reporting to subscribers includes several data sets and deliveries throughout the year. Finnpanel also provides subscribers with analysis software. Some of the results are freely available on Finnpanel's website.

Mobime will not replace existing measurement and/or data, but rather will investigate whether it is possible and reasonable to enrich the existing data with data from other databases. Is it possible to fuse existing databases? What algorithms should be used, etc? Can we create a data set that can calculate the net reach and frequency for a campaign that uses both TV and radio? Or is it possible to create target groups created in the TNS Atlas survey, to be used in TV and/or radio data sets? Is it possible to use data from TNS Metrix to calculate the gross impact of campaigns using TV, radio and web-based services provided by the TV and radio stations?

6.1.3 TNS Atlas

TNS Atlas, hosted by TNS Gallup, has been designed for brand marketing, planning marketing communications and strategic media design. The relationship between brands, consumers and the media can be analysed in order to highlight brand positioning, competitive comparisons, the selection of target groups, media planning and differentiated communication strategies for various target groups.

TNS Atlas forms a comprehensive source of information on media use by the Finnish people. It contains information on media consumption both in terms of intermedia as well as on a media title level for almost all media types. Furthermore, it contains vast information on product and brand preferences, places of purchase and a variety of background data on consumer lifestyles, including things like hobbies, leisure time activities, attitudes, the economical situation and objects of interest. TNS Atlas contains more than 800 media titles and more than 1,000 brands and chains of shops. Over 200 lifestyle statements are included in the survey. The data are collected on a continuous basis. From 2005 to 2009 the data were collected via telephone interviews and mail

questionnaires. Since 2010 data collection has been executed via the TNS Gallup Forum internet panel.

MediaPlanner software is designed for quick and flexible analyses of large survey data, such as TNS Atlas data, and for versatile media planning work.

The expectations of TNS Gallup regarding this project are that we can in the future provide the market with even deeper media consumption understanding by enriching our current surveys – TNS Atlas and TNS Metrix – with different media currencies. The enriched cross-media currency with profound consumer insight from TNS Atlas would bring added value to all parties and would make the usage of the data much more convenient and versatile.

6.1.4 TNS Metrix

TNS Metrix is an online audience measurement solution that serves media, advertisers and agencies in various ways. The most important parts of the service are weekly public listings of the usage of sites and a media-specific reporting tool for the clients.

The public metrics of online media are:

- Weekly visitors
- Weekly browsers
- Weekly page views
- Time spent on site

Various other metrics and reports are shown in the client-specific reporting interface.

Collected data is mainly based on javascript data collection methods from standard http traffic. Raw data consist of all key components of http requests. Similar TNS online audience measurement technologies are being used in many European countries. However, the solution is able to adopt local definitions and guidelines of online media and measurements.

Within TNS Metrix services, mobile websites, mobile applications and e-reader and tablet content usage (e.g. iPad applications) are also being measured. Mobile devices and their content are measured using advanced technologies developed by TNS Gallup and QAim.

Some of the measured services and content are published in the weekly public listing service under the category “mobiilisivustot”.

Development needs are mostly related to merging site-centric data with other types of data. Potential merged data types include demographic data, other behavioural data and categorised online data. Measurements of online video and online radio are being developed but their integration with other information is still at an initial stage.

As TNS Metrix data is site-centric, not user-centric, only some data fusion options are applicable. The most relevant advantages of data fusion are related to new value-added uses of current data.

Public metrics on online media (TNS Metrix weekly list) are available at: <http://tnsmetrix.tns-gallup.fi/>. Public data are supported by interview data.

The current development of EU legislation and its relationship will be key when developing any data fusion that includes site-centric data. TNS Gallup and Kantar Media are actively participating in the legislation process.

6.1.5 National Readership Survey (NRS)

The Finnish Audit Bureau of Circulations (Levikintarkastus Oy²⁵) organises the National Readership Survey (NRS) for printed media (Kansallinen mediatutkimus, KMT). It produces readership figures for newspapers and periodicals and information about the structure of the readership. Data are also collected on the use and purchase of products and services, general media usage and consumer attitudes. The actual research is carried out by TNS Gallup in the form of telephone interviews and mail questionnaires. Reporting is performed twice a year on a site called NettiKMT (NetNRS). The official readership figures of the titles are reported, as well as the profiles and covers in certain target groups. The data can also be processed with software authorised by Levikintarkastus Oy and the Controlling Committee.

The owners of NRS data will wait until the preliminary fusions have been made, after which they will decide how to proceed. If the decision is to merge with NRS-data, they will want to be part of the Steering Committee.

²⁵ <http://www.levikintarkastus.fi>

6.2 Analysis of the data contents

The media survey data content analysis was carried out based on detailed data descriptions and data contents examples from two companies. With regard to the missing data sources, the analysis was based on the information provided during the interviews performed during the project.

Detailed data descriptions and data content were available from the following sources:

- TV Audience Measurement (TV-mittaritutkimus)
- The National Radio Listening Survey (Kansallinen Radiotutkimus)
- TNS Atlas, a cross-media survey

The analysis focussed on identifying:

- What data are currently collected by different parties
- How much overlapping data there are
- How commensurable the data are

Figure 7 shows a rough overview of the data collected by each partner. Each media survey company collects information about individuals and their backgrounds. TV-audience measurement and TNS Atlas also collect data on the households/families to which the individuals in question belong. The level of detail varies, TNS Atlas having the richest content. The person's background data in each studied dataset contains sex, spoken language, profession, education and income. Some of the background information is connected to the household/family data (e.g. where they live). In addition, each system varies greatly in terms of its own particular background details.

Each system stores information of the objects of interest that they are following, e.g. radio or TV-channels, magazines that are being read or products that are being bought. TNS Atlas again has the richest variety, covering many areas of interest. But the TNS Atlas data are not necessarily sufficiently deep for companies focussed on a particular topic. For instance, TV audience measurements require more detailed information about the TV programmes in question, such as starting time and duration.

The third data group is the survey results. These are specific for each system. The collected data are different, but in the event that they are the same, the level of detail and coding systems differ. For example, one system may store the exact time at which

and for how long the TV is watched, whilst another will do so only if the person watched TV some day.

The background data are coded differently in each system; classifications and code values which mean the same things differ. For instance, a person’s income is grouped in one system to 3 classes and in another into 6 classes. Sex can be represented in one system as “1 - male, 2- female”, and in another “0 - male, 1 - female”. TNS Atlas has several classifications for the same topic, e.g. area classifications, based on the coding by the Finnish Statistical Bureau.

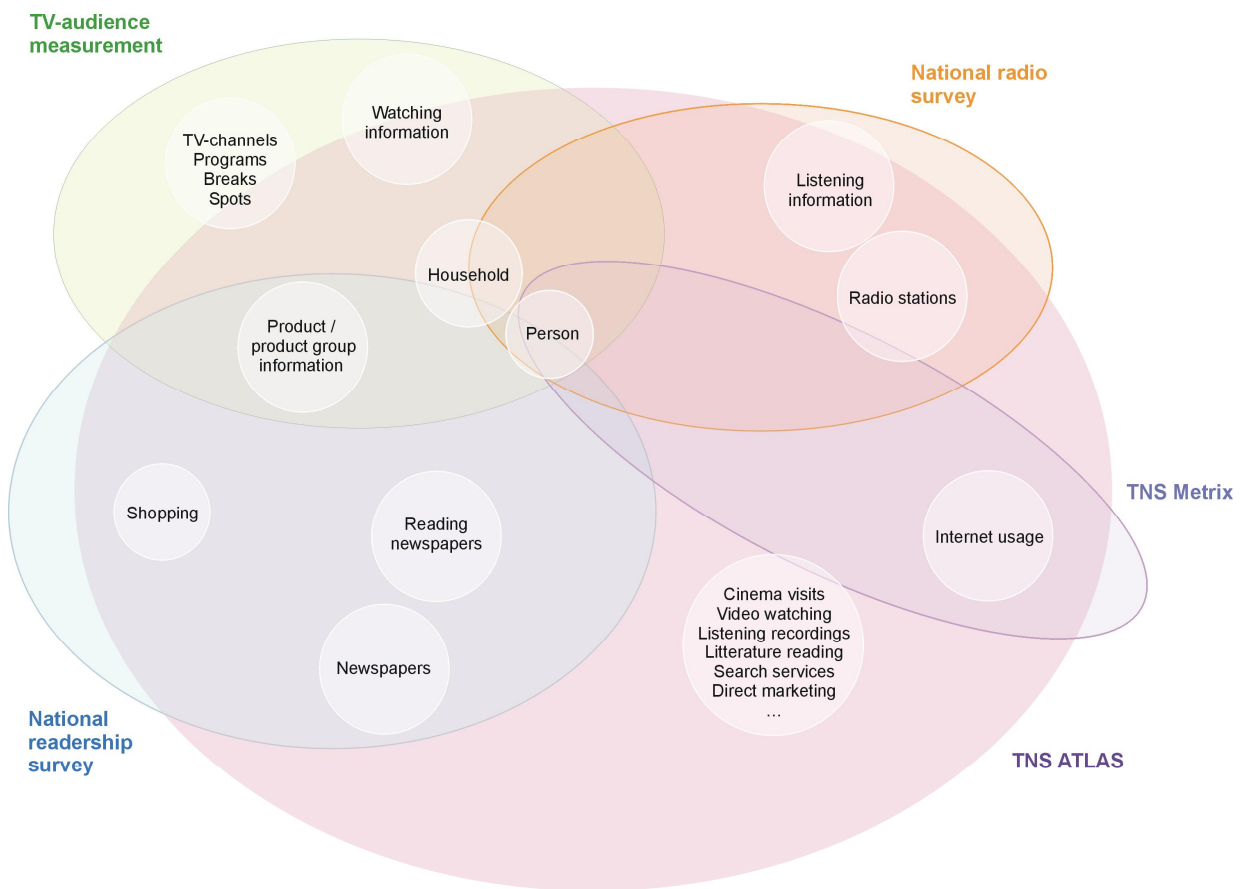


Figure 7: Overview of media survey companies’ data content.

Figure 8 summarises the data content of all partners. It comprises four different types of domain:

- Information about individuals and their families or households
- Information about objects of interest: newspapers, magazines, TV programmes and channels, radio stations and channels, websites, products, brands, shopping centres, etc.

- Survey results, relating to watching TV, listening to the radio, reading magazines, newspapers, Internet usage, going to the cinema, shopping, etc.
- Codes and classifications

In order to analyse to what extent data overlap and how commensurable the data are, the data contents must be considered based on data type and data instance level. Data type level means that similar types of data are gathered but not necessarily from the same individual. Data instance level means that data are gathered from the same individuals or objects of interest.

Information about individuals and their families overlaps at a data type level but not at an instance level. Similar data are gathered on individuals and families but not necessarily from the same individuals. This means that the personal information collected by one partner cannot necessarily be fused with another partner's data without affecting the statistical validity of the analysis.

Information about objects of interest, newspapers, magazines, TV programmes and channels etc. overlaps both in terms of data type and instance level. The same types of data and the same data instances are stored by different partners. These kinds of data are easy to share between partners, assuming the identification and classification of the objects is harmonised.

The survey results, relating, for example, to watching TV, listening to the radio, reading newspapers, etc., is the most disparate. The collected topics might be similar, such as watching TV or reading newspapers, but the point of view and level of detail differ. Readers, listeners and watchers are measured in different ways and with different metrics. TV surveys follow the previous day precisely. Radio surveys are published monthly, and papers and magazines are surveyed twice a year. The Internet is a world of its own and the measurements taken are not related to the same people. Fusion of this kind of data requires special techniques that are discussed in the next chapter.

Each system codes and classifies many similar things, but the naming, coding and classifications differ. The harmonisation of the code values and classifications is the first step towards commensurability.

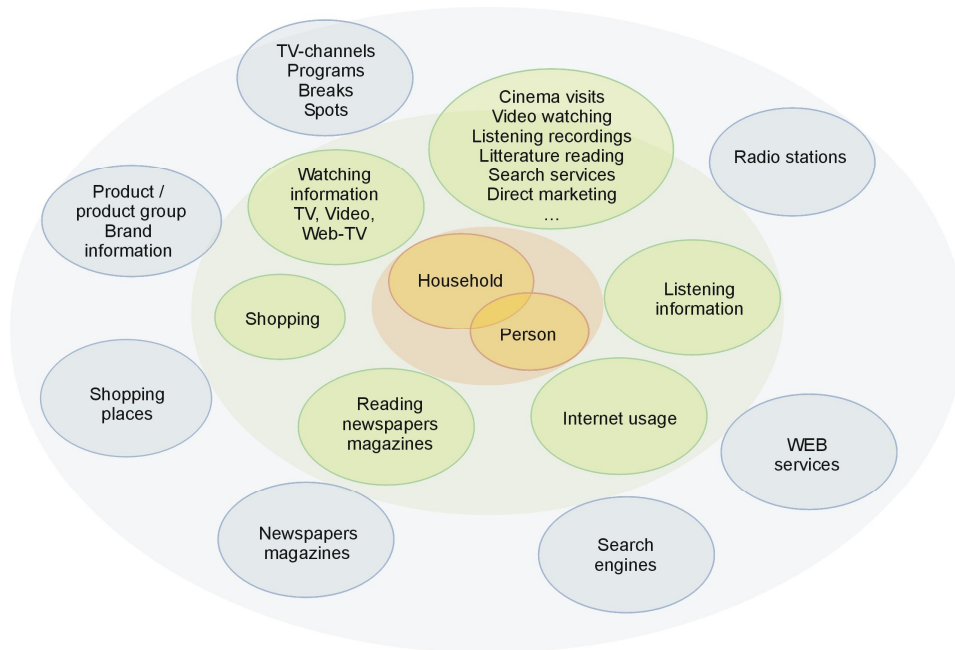


Figure 8: Data content types. Individuals and families (orange), objects of interest (blue) and survey results (green). Codes and classifications have been omitted from the figure.

6.3 Data fusion methods

Data fusion is basically the matching of data sets from two surveys at the respondent level. Fusion requires the surveys to have common characteristics: usually demographic, geographical, or relating to media usage, etc. The most popular form of data fusion is the (TAM+TGI)-like fusion, where TAM refers to television audience measurement and TGI to Target Group Index. The respondents from the TAM and TGI databases are matched to each other based upon the similarity of common variables (such as age, sex, geography, television viewing, etc)²⁶.

There are three basic statistical methods for implementing (TAM+TGI)-like fusion e.g.²⁷:

- a. *Random duplication.* Assuming the two databases are statistically independent, the respondents of the two databases can be mapped randomly. Roughly speaking, if 50% of the respondents of TGI-survey use product A and 10% of the respondents of the TAM survey watch programme B, the overlap of the product A users who watch the

²⁶ Soong and Montigny, 2003

²⁷ Soong and Montigny, 2004

television programme B is 5%. However, the assumption of the statistical independence is usually suspect.

- b. *Simulation Method.* This method divides survey data into demographic cells, assuming that within each cell the data are statically independent and the samples can be mapped randomly. Again this method depends on statistical independence conditional on the gender/age-defined classes that can be suspected.
- c. *Unconstrained Statistical Matching.* This method, also known as known as the nearest neighbour classifier, was developed for the fusion of the BARB and TGI databases in the United Kingdom²⁸. The respondents of the two databases are mapped based on who is most similar in terms of a list of common variables (e.g. gender, age, education, income, occupation, television viewing, etc).

There are also several more advanced algorithms, some of which aim to “fusion-on-the-fly”, referring to methods for customised fusions that can be executed rapidly in an interactive environment.

Data fusion has been used in media research since 1980s despite obvious obstacles: there are serious theoretical concerns about the validity of the fusion results, i.e. whether or not the analysis of a data set fused from two data sets of two different surveys produces valid results, as well as legal issues relating to combining person registers.

6.4 Fusion architecture alternatives

The data systems that the fusion deals with are composed of the following components, each of which has a different role in the fusion:

- Data collection tools
- Data contents, data management solutions
- Analysis and reporting tools

²⁸ Baker & al. 1989

There are several fusion approaches:

- a) *Common database* with shared tools for data collection, analysis and reporting. Each partner uses the same database with similar tools.

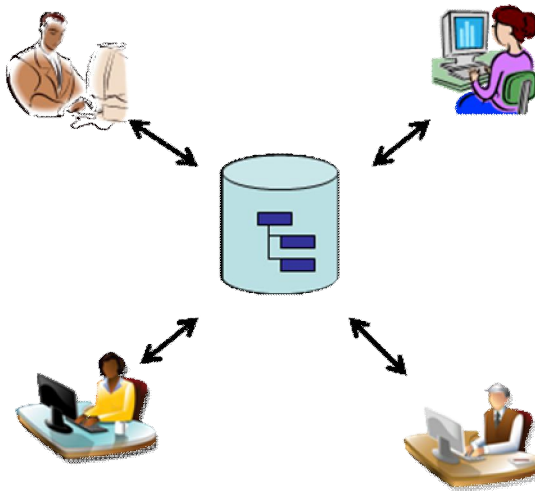


Figure 9. The common database contains all information about the individuals, their background data, all information about the objects of interest (media, products, shops...), the survey results and data classifications. The data is updated and reported by shared tools that are built in co-operation with partners. The ownership of the data of each partner is managed by access control mechanisms. Classifications can be made available to each partner; the rest is more or less company-owned.

- b) *Shared data model*. Each partner has its own databases, all of which share a common data model. Partners exchange data in a similar format. Partners can use similar tools for data collection, analysis and reporting, but can use and develop their own tools.

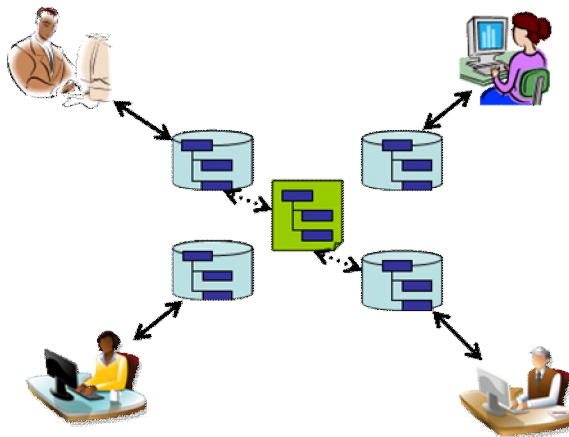


Figure 10. In the shared model each partner has information about the individuals, their background data, all information about the objects of interest (medias, products, shops...), the survey results and data classifications in their own databases. The data in each database are in a similar format, which makes data exchange easy.

- c) *Data exchange model.* Each partner has its own databases as now, which are modelled in its own ways. The data is shared and exchanged with partners through a common data exchange model and data transformations. Each partner has its own tools for data collection, analysis and reporting.

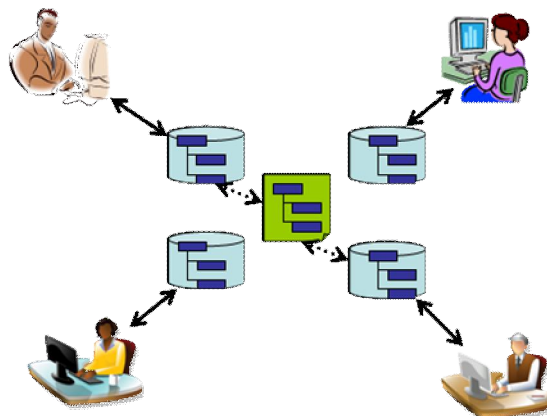


Figure 11 In the data exchange model, each partner has information about the individuals, their background data, all information about the objects of interest (medias, products, shops...), the survey results and data classifications in their own databases in their native formats. A common data model is used in the data exchange. If another partner needs to use data owned by another partner, the data are first transformed to the common data model and then to the data model of the receiving partner.

- d) *Shared reporting*: each partner has its own database as now. The data models are harmonised in such a way that it makes possible to create shared reports; for example, by agreeing on data formats and similar classifications to code values meaning the same things.

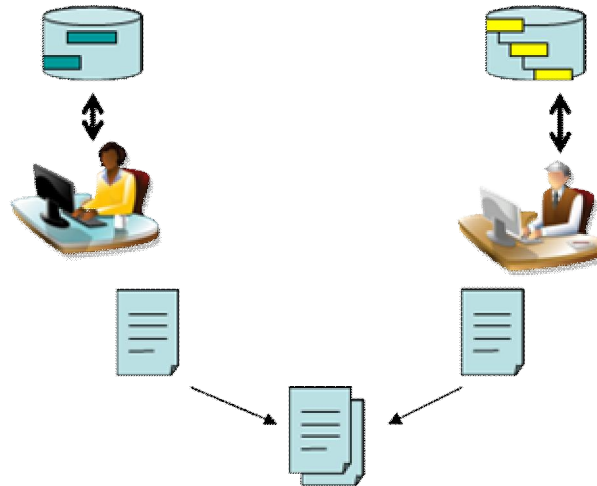


Figure 12. Each partner has its own databases, which are modelled in their own ways. In order to be able to produce reports that share knowledge from the different databases, classifications and code values meaning same things are harmonised.

- e) *Data partition model*: each company keeps the data relating to its core business to itself, while the rest is stored in a common database. For instance, individuals and their background information and shared objects of interest (TV channels and radio stations, magazines etc.) are in the shared storage, and the media usage data is in the possession of each partner.

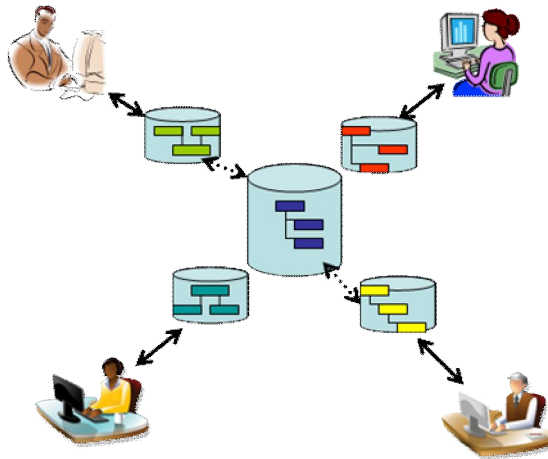


Figure 13. In the partition model the classifications, common objects of interest such as the different types of media, and a person panel could be in a shared database. The survey results could be in each partner’s own databases.

6.4.1 Discussion of each alternative

a) Common database

- A common data model, “standard”, for the common database is required. Agreement of the contents is not straightforward.
- Building the system is such as normal database application development, but can be a big and costly effort. Companies might have conflicting interests.
- Data conversion from earlier data sources is such that requires special conversion procedures. The converted data are not necessarily useful for other partners.
- A service provider is required to manage the database.
- The business model changes, whose capital are the data now?
- Adding new features requires negotiations.

This model has a lot of potential in respect of achieving a comprehensive image of media users. It also enables comprehensive analyses when all data are available in the same database. Overlapping work is minimised and the joint development of new tools for data collection and reporting is technically straightforward.

b) *Shared data model*

- As in alternative ‘a’, a common data model is required.
- Each partner needs to restructure their data sources according to the data model.
- Data exchange procedures are easy to implement, and no complicated data conversions are required.
- The business model does not change; the data are owned and managed by each partner as before.
- Additions that do not affect the data model are easy to implement. Modifications to the data model require negotiations.

This model has similar potential to alternative ‘a’ when it comes to enriching media use data, but the availability of the data depends on the interests of each partner. Overlapping data collection is avoided and similar tools can be used for data collection, analysis and reporting.

c) *Data exchange model*

- A data exchange model is required, defining the data formats and ways in which the data can be exchanged.
- Transformation applications for transforming the data from their original format to the exchange format and the opposite are required.
- No need to modify the present solution or the business.

In this model a rich image of media usage can be created but it depends on the interest of each partner. Overlapping data collection is not avoided, and each partner has to individually develop its own data collection, analysis and reporting tools.

d) *Shared reporting*

- A harmonisation model is required, listing all classifications and formats.
- Each partner must modify the data sources according to the model (a smaller effort than in alternative ‘b’).
- The reports from each partner become commensurable and can be compared more easily, even combined.

- The business model does not change.

The rich media usage image is acquired by combining reports from different sources. In other ways there are no benefits compared to the present state.

f) Data partition model

- Requires a common data model for the jointly managed data.
- Each partner requires data transfer tools for its own systems.
- The core business does not change much.

The rich media use image maybe limited, depending on what data each partner has. Overlapping data and costs for collecting data are partly avoided.

6.5 Conclusions and recommendations

6.5.1 Pros and cons of the fusion

Pros: the fusion could strengthen and bring savings to the media research domain. The media research industry could utilise all the data collected and therefore avoid the collection of overlapping data. The data could be collected more efficiently and could be combined with new sources so as to enrich the overall content. The portrait of the consumers would be more realistic. The players in the media research industry could better serve their customers – media and advertisers. New tools, such as mobile collectors and analysis tools, could be developed with reasonable expenses when several partners share the expenses. This would make it possible to have new – more automated – even “real-time” chargeable services and would add quality to quantity.

Cons: the process would need a lot of work and resources, which means long-term investments. Its development would require strong common will, co-operation and agreements in the domain area. Depending on the business model there may be several issues in data sharing and security which would need to be discussed. In addition, the fusion method would need to be carefully selected to ensure statistically valid results.

6.5.2 Steps to data fusion

The fusion implementation consists of two phases:

6.5.2.1 Proof of concept

- Study and test fusion methods developed for statistical fusion, to know how to best qualify and enrich the information.
- Plan how to best analyse, visualise and report the results.
- Create a proof of concept prototype. To ensure the usability of fusion techniques in reality, demonstration software is implemented using some limited, jointly agreed and selected samples of the real data.
- Evaluate the results by comparing the results produced with traditional and “fusion” methods.
- Produce recommendations for the fusion and reporting techniques for the implementation project.

6.5.2.2 Fusion implementation

- Plan and launch the actual fusion implementation project.
- Select the business model.
- Plan the system architecture that is in accordance with the business model. The main question relates to what is done and owned jointly, and what parts are in the possession of each partner. Will there be common shared data storage with data collection and reporting tools, separate systems or something in-between?
- Design a common reference data model for the domain area.

- Harmonise the data classifications, code values and data types so that each partner uses similar values.
- Plan and implement the new solutions, including fusion and conversion algorithms, data storages, data exchange procedures, etc., depending on the system architecture.
- Plan and implement new means and tools to collect data in the new architecture.
- Plan and implement new reporting methods and tools that the new solution and rich data content makes possible.
- If required, perform data conversions to move the data from the present systems to the new environment.
- Put the new system into use.

7 Mobile Data Collection Technologies

Media consumption and consumer behaviour has traditionally been studied by surveys or diaries. Research has been carried out in the form of case studies as well with a certain point of interest and using specific feedback input devices. If the group of participants is large, the cost of the devices used will be very high. One way to gain cost savings could be that as nearly everyone in Finland has their own mobile phone, these could be used to collect data from the consumer's media day.

Phones are devices people always carry with them; they are very personal and whenever someone is alerted by their phone (alarms, message, etc), they are typically keen to react to their phone's activity. Modern smartphones are also very advanced in terms of processing and communications capabilities and they contain sensors for exploring the user environment. Mobile phones could be used to record a consumer's mobile media usage as well as overall media consumption. This could be done by developing monitoring software that could be installed on the phone. The requirements for the data collection must be carefully specified before the software is designed. Also, a more detailed description of the possibilities provided by the mobile phones should be generated and presented to the participating companies. Based on the data collection requirements and possibilities of the phones, more detailed software specifications can be designed from 2012 onwards. Preliminary ideas about such possibilities for data collection include collecting very accurate data on a device's application usage, a user's location, and recording and analysing surrounding sounds. Data collection software could also guide the participant to periodically fill in a survey and take photographs or video footage from their actions or perception. Close range network connections, such as Bluetooth, could be used to estimate the proximity of other family members or other data collectors. The data collection could be arranged as a socially communicating application so that the actions of one participant would trigger a query for another

participant, etc. In the future, NFC²⁹ readers are expected to become more popular in mobile phones. These would add a user-friendly method for tagging user actions.

Certain issues are to be considered when building new solutions for data collection, which are related to the common challenges of conducting surveys. The willingness of cooperation of individuals in the sample is an important issue to be tackled. An intermedia currency must be based on a representative sample, thus, a mobile data collection system would most probably be supported by other data collection methods (such as online or paper-based questionnaires).

An important issue that should be carefully investigated over the years to come is the issue of company-managed mobile phones. According to an expert interview, a significant number of mobile phones (and access) in Finland are managed by an employer, and this segment is very important as the proportion of Internet-enabled smartphones is exceptionally high. Thus, this may prove to be a great challenge in our efforts. According to estimates, corporate IT policies do not currently allow direct collection methods (e.g. monitoring software) to be implemented in employers' phones, and this would thus restrict data collection in many cases in relation to B2B media, and also parts of consumer media. Currently, policy restrictions are the key reason as to why Internet data collection does not rely on monitoring software, since companies do not allow such software to be installed. Assessments have been made, which indicate that the same restrictions will be applied to mobile phones.

The data collection should be implemented on a smartphone platform (Symbian, Android, iPhone). The penetration of such smartphones is not very high at the moment, but it is increasing steadily, thus the potential user base for the data collection is increasing as well. There are several different smartphone operating systems and versions thereof, which would mean high costs of developing and maintaining the required software if every possible platform must be supported. One possibility to limit development costs would be to select just a few supported phone models. A compromise between the development costs and the size of the potential data collection population must be defined by the participating companies. In 2009, studies by Riikonen³⁰ into the Finnish market showed that the share of Nokia-manufactured phones was approximately 89% and the share of Symbian smartphones was 22%. Other operating systems are, however, attaining more and more market shares. The research company Gartner has estimated that globally, by 2014, Android will achieve the same

²⁹ NFC = Near Field Communication. "A short-range high frequency wireless communication technology which enables the exchange of data between devices over about 10 centimetre distance". wikipedia.org

³⁰ http://www.netlab.tkk.fi/tutkimus/momi/publications/Riikonen_2010_Mobile_Handset_Population_2005-2009.pdf

market share as Symbian and Apple's iPhone OS will follow at the same level compared to 2010.³¹ Gartner has also estimated that in 2013 in Western Europe and Japan, 80% of mobile phones will be smartphones. Some software developing problems could be resolved using techniques and tools made for several platforms, such as HTML5, QT by Nokia (software environment) or Flash by Adobe. It should be noted that even within the same operating system, there are differences from model to model in e.g. camera control.

During the industrial representative interviews some concern was expressed about the present reach of mobile data collection. This concern should be carefully investigated over the years to come. According to an estimate, at the end of 2010 many existing data collection technologies are not completely operating in most mobile phones, but the best technologies may currently work in 20-25% of mobile phones used in Finland. An assessment was made that this will change in 3-5 years, but as a reliable and covering method mobile data collection should not be used in the next few years. Similarly, as the number of new mobile platforms is likely to increase in the next 2-3 years, the future of mobile data collection may become even more complex.

In addition to data collection, the data must be analysed and the analysis environment must therefore be designed according to the requirements of the data collection. The development of the data collection and analysis needs to be designed carefully and in co-operation with all the participating companies in order to minimise development costs while maintaining the flexibility required for collecting the information.

An important aspect in building a tool for mobile data collection is that at the moment mobile data collection is not seen as a very cost-effective way to collect data. Access costs of mobile internet and the costs of collection applications tend to be fairly high when compared to traditional Internet. Similarly, as some of the costs are typically addressed to the respondent, a mobile data application faces practical billing issues. In most cases, respondents are not willing to pay for data collection.

Furthermore, in the MOBIME project it should be carefully planned as to what information would be required to enrich the fused data of present media consumption studies. This would make it possible to define the technological systems required for mobile data collection.

³¹ http://www.tietokone.fi/uutiset/gartner_android_saavuttaa_symbianin

In the United States the Coalition for Innovative Media Measurement (CIMM)³², in collaboration with the Media Behavior Institute (MBI), is running a study from September 2010 to February 2011 based on the UK Institute of Practitioners in Advertising's IPA TouchPoints service. They are going to use a sample of 1,000 participants, all of whom would receive an Apple iPhone on which they would report what they are doing every half hour. The study has a budget of just under one million US dollars.³³

Integrated Media Measurement Inc. (IMMI)³⁴ from the United States has its own patented measurement platform that runs on PCs and mobile phones together or individually. IMMI provides devices for its selected panellists if they don't have their own smartphones. The measurement system tracks each panel member's Internet usage and also records ambient sounds, which are compared to their databases of different media. The system is said to be able to track the following:

- Television viewing outside the home
- Time-shifted and on-demand viewing
- Radio
- DVDs, audio CDs
- Theatrical films, live concerts and sporting events
- Mobile phone videos and games

IMMI claims that its system has greater than 99% accuracy when identifying exposure to media. This would be true if they had all media encoded into their databases. In those circumstances the databases would be enormous.

The list is really impressive, if it is true. It is a bit difficult to understand how IMMI distinguishes between, for example, a film being shown on TV and the same film being played on a DVD player. It is possible that time-shifted TV programmes can be recognised by first identifying the programme and then comparing it to the time schedule, but this is very demanding. On the whole, the task can be realistic, if you just want to identify the media type, not a specific media item like a certain TV programme or a newspaper article.

³² <http://www.cimm-us.org/press.htm#> (10 August 2010)

³³ Wall Street Journal, Tallying Up Viewers

<http://online.wsj.com/article/SB10001424052748704249004575385680793742048.html>;

³⁴ <http://www.immi.com>

8 Visual Analytics

Visual analytics is a recent field of research that provides visual and interactive tools for analytical reasoning and decision-making from data. The basic idea of visual analytics is to combine the strengths of automatic data analysis with the visual perception and analysis capabilities of the human user. It is a multi-disciplinary research area, combining information visualisation science, data mining, mathematical and statistical methods, data management, user interface techniques, human perception and cognition research. Application areas can be anywhere where there is a need for drawing conclusions and making decisions based on accumulated data.

Visual analytics has its origins in U.S. national security. The US Department of Homeland Security (DHS) started a research initiative on visual analytics for homeland security. The “National Visualization and Analytics Center” (NVAC)³⁵, founded in 2004, coordinates these research efforts. The agenda for the US visual analytics research programme is laid out in the book “Illuminating the Path”³⁶, which describes visual analytics research challenges focussing on security applications such as border security. Although the agenda is focussed on homeland security, the new capabilities will have an impact on a wide variety of other fields, ranging from business to scientific research.

Because this research field is so new, there are no full-scale visual analytics tools currently on the market. Many research activities are in progress around the topic³⁷ producing ideas for domain-specific tools. Visual analytics has been an active research area at VTT, together with TKK and Helsinki Institute of Information Technology

³⁵ <http://nvac.pnl.gov/>

³⁶ Thomas, J.,Cook K. 2005. Illuminating the Path: Research and Development Agenda for Visual Analytics, IEEE Press, p.194.<http://nvac.pnl.gov/> . 2005.

³⁷ Keim, D.A. Visual Analytics in Europe, NVAC Views. <http://infovis.uni-konstanz.de/papers/2008/NVACViews2008.pdf>. 2008.

(HIIT), since 2007. A joint report³⁸ introduces the concept and the state-of-the-art of the area in more detail.

A visual analytic tool provides means for:

- showing different views of data: a variety of interactive visualisations produced from the data;
- data retrieval, filtering, browsing and exploration;
- data analysis for finding patterns in data: similarities, anomalies, relationships and events;
- visual representations of large quantities of information in a small space;
- access to the raw data from data abstractions;
- simulation, prediction, testing hypothesis.

In the field of market research, visual analytics is a novel area and offers a promising new approach. It can provide tools for quick reporting, planning, following the impact and gaining insight of the underlying phenomena.

³⁸ Järvinen, P., Puolamäki, K., Siltanen, P., Ylikerälä, M. Visual Analytics. VTT Working papers 117. <http://www.vtt.fi/workingpapers/2009/W117.pdf>. 2009.

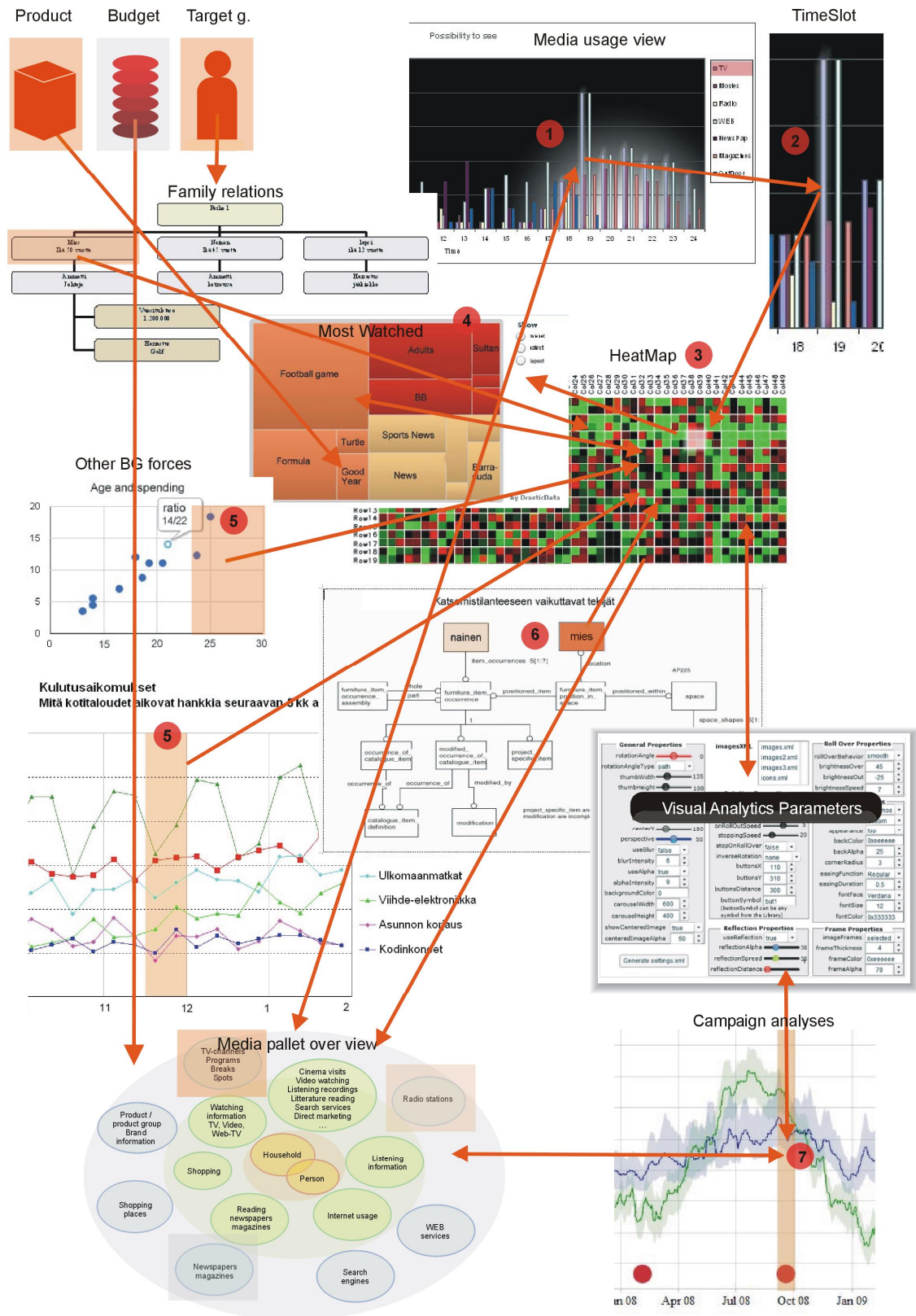


Figure 14: Example of visual analytics use case

Figure 14 outlines one example use case of how a visual analytics tool might be used in market research. The tool has a user interface in which all the most important parameters can be adjusted. The user is able to generate different views of the data and request more detailed information on a topic of their choice.

A customer, who sells tyres, is planning to launch a marketing campaign. The marketing company is using a visual analytics tool that has access to a large variety of media survey data, including knowledge about customers, their interests, their media use, etc. The objective of the analysis is to identify the best media channels through which to advertise the tyres to the target group (young, well-paid fathers, later ‘men’) with the given budget.

The user starts with a study of the media pallet. The first view (1 - Media usage view) shows the media usage of the target group (men). It is a bar chart showing the volumes of each media during a selected time period. The user can iterate within the view, add or drop media, make the target group more general or more specific and change the time period. The user is also able to select a more specific view from the most interesting areas (2 – Time slot).

The user then notices that TV is the most interesting media for penetrating the target group. The user selects the TV bar of the Time slot and gets the “heatmap” (3). It shows the channels and the interest levels of the target group in the selected time slot. The colours indicate the interest levels that are based on the background data analysis of the target group. The target group analysis is visualised as a “treemap” (4), showing in this case football to be the most interesting topic. The user can then select a particular topic from the treemap to see how it changes the interest levels in the treemap, such as: “What are the favourite TV channels of men interested in football”. The “hot-spots” of the heatmap view can also be selected, which correspondingly show the interests of the programme watchers. When selecting the “hot-spots” the user can get more detailed information still, about, for example, the programme and all the advertisements from the same time slot from different channels. From there, users can select the best candidates for their advertising campaign.

The user can also get other views of the data to support their decision-making, such as scattergrams showing correlations between age and consumer habits, for example (5), or time series showing changes in media behaviour during a certain time period (6). The tool can also automatically suggest supplementary media (“find similar”) to the media pallet. If the system includes prices, the tool can find the optimal solution within the given costs.

Approximation iterations of the success of the campaign can be made by simulation against historical information relating to similar campaigns, and, after the campaign, the tool can analyse the success of the campaign based on the collected data. Looking to the future, the user can study how to adjust the campaign for the next campaign period (7).

This example highlights only a fraction of the possibilities that visual analytics could bring to market research. Building a workable visual analytics tool requires tight co-operation with experts in the domain, in order to identify the best visualisations and analysis methods for the user's needs.

9 MOBIME in 2011

During the second year of the project the comprehensive everyday media use survey will be evaluated, the system will be demonstrated and its market potential evaluated. Mobile tools for monitoring every day media experiences will also be evaluated and benchmarked. The research partners will develop the demonstration environment and perform the research, while the industrial partners shall agree on the fusion, will specify the requirements and will evaluate the usability of the system. The industrial partners will also collect information on the international situation of mobile data acquisition relating to media use.

Role	Participant	Resources (person months)
Case Leader	Dagmar Oy, Katariina Uljas-Ahl	5.2 pm
Company partner	Finnpanel Oy, Lena Sandell	2.5 pm
Company partner	Sanoma Television Oy / Nelonen Media, Tina Åström	2.0 pm
Company partner	Sanomalehtien Liitto, Sirpa Kirjonen	0.4 pm
Company partner	TNS Gallup Oy, Virpi Öström	2.5 pm
Expert advisor	JCDecaux, Anna Vähäsalo	
Company partner	Kustannus Oy Aamulehti, Heli Virola	1.6 pm
Company partner	Mainostajien Liitto, Ritva Hanski-Pitkäkoski	0.5 pm
Company partner	MTV Oy, Taina Mecklin	
Company partner	Sanoma News Oy, Johanna Maula	2.0 pm
Company partner	RadioMedia, Riina Aho	1.5 pm
Company partner	MFabrik, Timo Kiippa	2.0 pm
Research partner	VTT, Anna Viljakainen	6.3 pm
Research partner	Aalto University School of Economics, Pekka Mattila and Jari Salo	7.2 pm
Expert advisor	Levikintarkastus Oy, Ullamaija Arasto	
Total amount of work		33.7 pm
Contact person	Katariina Uljas-Ahl, Dagmar Oy, katariina.uljas-ahl@dagmar.fi, Tel. +358 40 589 1976	

9.1 Task 1. Developing data models for the merged media currencies

Based on the outcome of the first year of the project, data models for merging the currencies will be developed. The merged currencies should be mathematically defined based on existing and established currencies, or based on other measurable quantities. They will be utilised in the further applications of measurements.

The fusion agreed upon will be expressed mathematically and the required data models developed. The software will be tested with real data for functionality and documented in source code.

Partners and their roles in the task:

1. Dagmar Oy, Task leader
2. TNS Gallup Oy, Data acquisition expert
3. Finnpanel Oy, Data acquisition expert
4. Mainostajien Liitto, Advertising expert
5. VTT, Research performance

9.2 Task 2. Developing a demonstration system for reporting and visualisation

Specifications for a user-friendly demonstration system for reporting and visualisation will be developed. The demonstration system will be collected based on standard hardware and utilising the data models developed in Task 1. The prototype system will be tested for technical functionality.

The system may be based on visual analytics or on other visual description technologies. The reporting system will be specified in co-operation between the research partners and industrial partners and will be evaluated for usability by the industrial partners. The reporting system and its usability will be reported.

Partners and their roles in the task:

1. VTT, Task leader
2. Dagmar Oy, Media and advertising expert
3. TNS Gallup Oy, Data acquisition expert
4. Finnpanel Oy, Data acquisition expert
5. MFabrik, Mobile data transfer expert

9.3 Task 3. Testing the demonstration system for reporting and visualisation in practice

The demonstration system for reporting and visualisation is tested with a number of real users. The system is evaluated regarding usability and user-friendliness. Based on the outcome of the user tests the system is further developed. The results of the user tests are reported.

Partners and their roles in the task:

1. Dagmar Oy, Task leader, Media and advertising expert
2. VTT, research performance
3. TNS Gallup Oy, Data acquisition expert
4. Finnpanel Oy, Data acquisition expert
5. Nelonen Media, Media expert broadcasting
6. Sanomalehtien Liitto, Media expert newspapers
7. JCDecaux, Ad expert
8. Kustannus Oy Aamulehti, Media expert publisher
9. Mainostajien Liitto, Ad expert
10. MTV Oy, Media expert, broadcasting
11. Sanoma News Oy, Media expert, publisher
12. RadioMedia, Media expert, radio
13. MFabrik, Mobile data transfer expert

9.4 Task 4. Monitoring everyday media experience

The scope of the task is to evaluate, verify and exploit the potential of qualitative data in the development of comprehensive customer and market insights into the role of different media in consumers' everyday life experiences and their impact on consumers' behaviour. This includes observing, scanning and tracking everyday media usage and experience and the impact of marketing communications – in particular advertising – provided by different media. By the end of the second year of the project the outcome will be an extensive qualitative survey on behavioural patterns, attitudes and willingness to adopt alternative technical solutions and their potential business applications. These insights will provide a comprehensive starting point and behavioural proof-of-concept for the future development of the work.

Partners and their roles in the task:

1. Aalto University School of Economics, Task leader and implementation partner
 - a. Qualitative research expert implementation partner
 - b. International benchmarking expert
2. Dagmar Oy, Media and advertising expert

3. Finnpanel Oy, Data acquisition expert
4. TNS Gallup, data acquisition expert
5. Nelonen Media, Media expert broadcasting
6. JCDecaux, outdoor advertising expert
7. Kustannus Oy Aamulehti, Media expert publisher
8. MTV Oy, Media expert, broadcasting
9. Sanoma News Oy, Media expert, publisher
10. Radio Media, Media expert radio
11. MFabrik Oy, Mobile data transfer expert

9.5 Task 5. Evaluation of the market potential of the system and reporting

The market potential of the prototype system will be evaluated by the partners. Final agreements on exploitation will be developed. The final report will be prepared.

Partners and their roles in the task:

1. Aalto University School of Economics, Task leader, Consumer insights expert
2. VTT, Research performance
3. Dagmar Oy, Media and advertising expert
4. TNS Gallup Oy, Data acquisition expert
5. Finnpanel Oy, Data acquisition expert
6. Nelonen Media, Media expert broadcasting
7. Sanomalehtien Liitto, Media expert newspapers
8. JCDecaux, outdoor advertising expert
9. Kustannus Oy Aamulehti, Media expert publisher
10. Mainostajien Liitto, Advertising expert
11. MTV Oy, Media expert, broadcasting
12. Sanoma News Oy, Media expert, publisher
13. RadioMedia, Media expert radio
14. MFabrik, Mobile data transfer expert

9.6 List of Deliverables

(Deliverable types: AS = Article in scientific journal; AT = Article in trade magazine; CP = Conference paper published in proceedings; R = Report; D = Demonstration; S = seminar; T = Trial; P = Prototype)

MOBIME		Responsible partner	Participating partners	Deliverable type	Due date
D1	1.1.1.1 Data models for merged media currencies 1.1.1.4 Survey for monitoring everyday media usage	VTT Aalto University	All	R	M3
D2	1.1.1.2 Demonstration system for reporting and visualisation	VTT	Dagmar Oy TNS Gallup Oy Finnpanel Oy MFabrik	D	M6
D3	1.1.1.3 System test report	Dagmar Oy	All	P	M10
D4	1.1.1.4 Survey for monitoring everyday media experience	Aalto University	All	R	M10
D5	1.1.1.5 Final report	Aalto University, VTT	All	R	M12

10 Conclusions and Recommendations

10.1 Results

MOBIME is one of ten projects being researched in the Next Media Programme (NM), which finances the Finnish media industry to generate profitable content services and enabling technologies. MOBIME was initiated at the beginning of 2010 with the project objectives of increasing comparability between media currencies and getting more qualitative elements added to media surveys that are said to yield mainly quantitative results. At present, there are four existing media currencies in the Finnish media markets: the National Readership Survey (NRS) for printed media, TV Audience Measurement (TAM), the National Radio Listening Survey (KRT), and Outdoor Impact for outdoor media. There are also a number of other media surveys that are widely acknowledged and utilised, but which do not hold the position of a currency, such as TNS Atlas (a cross-media survey) and TNS Metrix (an online audience measurement tool). Media currencies are measured using different methodologies and were initiated to serve the respective type of media. The differences lie in the depths of the data, as well as how and what data is gathered; i.e. relating to the sample and sampling, the source and size of the sample, the data collection method, and the frequency of reporting. Each currency/survey is governed by its respective survey data owners. The data processing of currencies takes place in multiple planning software that is built on the basis of the needs of each type of media.

Media currencies are used for buying and selling media advertising space and airtime. In 2009 media advertising spending in Finland excluding production costs reached over 1200 million euros. Advertising revenue is the main source of income for most types of media, but it is very sensitive to market economy fluctuations because during an economic downturn marketers make quite heavy cutbacks in marketing budgets. The recession has accelerated the gradual shift of advertising spending from traditional media towards online media. The situation today in Finland is such that each type of media has its own currencies, which measure quantity rather than quality. Such

currencies have been built for traditional media, but a radical transformation towards the digitalisation of media has recently been observed. There is a shift towards intermedia within intramedia; i.e. newspapers are being published not only in paper format, but also on the Internet, mobile, in tablets, etc. The comparability between media metrics and getting deeper into the qualitative elements of different media would benefit both media buyers and sellers. For publishers, this would bring about a deeper understanding of the value of the media being offered (qualities other than contact prices) and more detailed metrics for selling cross-media brands through different platforms. Marketers are interested in understanding from where they can get the best possible returns for their advertising investments, and comparable currencies would provide the tools to optimise a mediamix as well as proof of the effectiveness of different media being used in a campaign. Intermedia currencies are being built internationally, but we are still lacking an intermedia currency in Finland, mainly because of the small size of the market. Building an intermedia currency is extremely expensive.

MOBIME as a project is enormous, prominent, challenging, and multidimensional, but extremely rewarding. MOBIME started with a very small project budget (EUR 150,000) and small steering committee (five companies and one research organisation) in 2010, but was able within one year to almost triple the project budget (EUR 400,000) and the size of the steering committee (13 companies and two research organisations). MOBIME research results are based on expert interviews, archival material and public sources of information. Industrial representative interviews were conducted in spring 2010, and MOBIME steering group board meetings were held throughout the year. Altogether around 30 experts were interviewed. The steering group committee meetings were of utmost importance in guiding our work and moving the objectives forward, since the members of the board hold the best competencies and knowhow in Finland in respect to our research objectives. The board members represent all sides of the value network; media sellers, media buyers, and media data owners. We are very fortunate to welcome new members from the value network to the board next year.

The beginning of the first year mainly concentrated on concretising our objectives, what it was that we were actually aiming at. The work was executed both through steering group meetings and by interviewing industrial representatives. The project consortium parties were asked to introduce their viewpoints on the objectives and research questions that guided our work throughout the year. Step-by-step, we were able to narrow down and prioritise our research questions and objectives. At first, the project meetings were more about brainstorming, leading to more concrete next-steps and open questions to be resolved in the following year(s). The purpose of interviewing industrial representatives was to identify the needs and wants of the media industry value network. The responses could be categorised under five general topics for which improvements

were sought after: the roles of different media in consumers' lives, media currency comparability, consumer behaviour and media experience, media impact and effectiveness, and marketing/ad impact.

The initial research question posed at the beginning of the year stemmed from our finding that an intermedia currency is in high demand in Finland, but would be too expensive to be produced using the current research methods. The research question was formed as follows: how to build a cost-efficient tool for automatic or semi-automatic intermedia-level data collection? The research question had two sub-objectives: 1) to get comparability among different media metrics; and 2) to gain a deeper understanding of the roles of media in consumers' lives. What became apparent at the end of the year was that other research objectives should be prioritised, because the ultimate task to be accomplished (i.e. to build an intermedia currency and reporting system in a cost-efficient manner, which portray quantitative and qualitative data on cross-media use) was in fact much more complex than at first sight. It was emphasised by one member of the steering committee that the initial research objectives would not alone generate an intermedia currency:

“Even if the three key objectives set for this project [to merge existing media currencies, to build a tool for automatic or semi-automatic mobile data acquisition, and to build an on-demand and user-friendly reporting system] are fulfilled, they will not constitute a cross- or intermedia currency, since we need supplementary knowhow. But building them may support the creation of a new research concept in the long-term.”

Based on our findings, there are certain drivers for the media industry to merge media currency/survey data: 1) to enrich the media data of each partner; 2) to get more comparable media metrics for buying and selling media; 3) to share the costs of collecting data that certain data owners are missing; 4) to save on the costs of overlapping work in data collection, management, analysis and reporting; and 5) to be able to jointly develop new tools and methods for data collection, analysis and reporting. During the first two years of the MOBIME research project the primary stress is on examining state-of-the art Finnish media currencies and comparability between them.

At the end of 2010, VTT conducted a media survey data content analysis. The analysis was carried out based on detailed data descriptions and data content examples from two companies: Finnpanel Oy and TNS Gallup Oy. The analysis focussed on exploring: 1) what data are collected by TV Audience Measurement, the National Radio Listening Survey and TNS Atlas; 2) how much overlapping data are there in the surveys; and 3)

how commensurable the data are. The findings of the analysis revealed that each system codes and classifies many similar things, but the naming, coding and classifications between them differs. The work also demonstrated different methods for data fusion, alternatives for data fusion architecture, and proposed next-steps for building a proof of concept and implementing a data fusion. At the end of the year a reporting and visualisation system for integrated data (visual analytics) was also demonstrated. During the following year(s) it will be clarified whether such a system will be further developed and constructed, depending on the amount of work carried out in data integration and time/budget constraints.

2011 will focus on further investigating what data are contained in existing databases, what needs to be harmonised in the code values and classifications of different media data, what algorithms should be used in order to ensure the validity of any analysis performed, and what fusion architecture alternatives should be chosen for integrating data. A proof of concept will be developed to specify whether data integration is even possible. The work will begin with existing media currencies that have been built for traditional media, and our aim is to develop the base to enable the integration of new media currencies which will be developed in years to come.

Our objective is to examine whether one single intermedia currency can be achieved, or whether exchange rates between intramedia currencies could be developed. An *intermedia currency* has a fixed value that does not experience very radical changes, at least not over a short period of time. On the contrary, *exchange rates* have continuously changing values, since they are built on the basis of currencies that are weighted against one another. In the latter option, media currencies operate by themselves and are updated following their own cycles and methodologies. It is a general practice that currencies are developed further every now and then by data owners. When there are no constant values and the baseline changes, exchange rates must be updated. In order to be able to achieve our objective to either build an intermedia currency or exchange rate, negotiations must begin between those entities which own existing media currency/survey data or which generate business from the end product. A business model should be negotiated and developed very early on, since planning the system architecture for data integration must conform to the business model. Similarly, the legal challenges that are faced when combining information from different databases must be considered.

In addition to the more concrete objective of building exchange rates, there is a parallel objective for the second year that is less explicit. A common viewpoint that was raised in our interviews dealt with the issue of bringing the consumer to the forefront of all media research activity. A shift in focus is needed, from looking at the relationship

between the media and its target audience in “silos” to gaining a common understanding of how different media are present in consumers’ lives. On what platforms are different types of media strong, having evidence from not only quantitative, but also qualitative metrics? The interest of the media is to be at the right place, at the right time, with the right content, and to be able to pass along marketers’ messages – the source of their income. There is a need for deeper insight, since consumers are gaining more power; they are facing more choice with regard to the number of media available and the channels available within each type of media. The key questions to which the media industry is seeking answers relate to the impact of advertisements and the role of different media in consumers’ life experiences and their impact on consumers’ behaviour. Thus, one objective of the MOBIME project is to better understand and monitor consumers’ everyday media use and user experiences.

The initial project objective of building a tool for automatic or semi-automatic mobile data acquisition has been postponed and will recommence once data integration work has been executed. During the first year this objective was discussed on several occasions in both steering group meeting and in interviews with industrial representatives. A preliminary study on the existing mobile data collection technologies and the challenges that exist today in mobile data collection was presented. This work will be further studied by VTT in the coming years. The amount of efforts put into this task will depend on the amount of work placed on executing the other objectives, and the time/budget constraints.

A major benefit of MOBIME for the project partners is that discussions have begun as to how media data should be unified in one way or another. We have started to build a common vocabulary in terms of issues that are relevant in data collection or reporting when aiming at the comparability of currencies. Media currencies currently operate independently. It is our objective for them to be built using as coherent metrics as possible. For example, background variables (such as age, place of residence, or occupation) would be collected and reported using the same kind of categorisation. It would also mean that the reporting systems for different media data (such as MediaPlanner for NRS and TNS Atlas data, Arianna for TAM data, Telmar RBP for KRT data, and CAFAS for outdoor impact data) currently in use in media markets would probably experience some increased compatibility. Thus, discussions have begun on common definitions in respect to media data integration.

10.2 Encountered Challenges and Recommendations

"If we knew what it was we were doing, it would not be called research, would it?"
Albert Einstein 1879-1955

The following chapter is written from the researchers' viewpoint. A quotation from the IPA TouchPoints website is of use in explaining the foundations of the MOBIME research project: there was a "need for an industry-led, media neutral approach and the fact that each industry media survey is medium-based and will probably remain so due to their financial, political and technical make up"³⁹. Every single party involved in the MOBIME research project has made extensive investments in terms of time and money to generate their media surveys that determine their source of income – advertising revenue. The financial, political, and technical reasons that have generated existing media currencies are similarly affecting the level of cooperation in negotiations related to integrating media surveys. As suggested by a member of the project steering committee:

"It requires monetary investments to accomplish our goals, but no single entity is ready to be the sole financier. Every media has its own research methods and interests in developing its currencies further. The media sector, however, should have exemplary practices of cooperation in building a crossmedia survey. The risks are both the scarcity of money, and the consolidation of a wide range of differing interests."

Following IPA's words of wisdom, to combine 'industry-led' and 'media neutrality' is far from an easy task, especially in a project such as MOBIME. The Next Media Programme emphasises that "enterprises in the media sector should operate as project leaders in the research projects, since the projects must stem from companies' strategies, be risky, and strive for profitable business. Companies should do preparative work for the research organisations and researchers should do preparative work for the companies". To be blatantly honest, we as a collaborative project group have not sufficiently succeeded in these objectives. It is our opinion that we, the researchers, have expected a deeper initiative and involvement from the steering group committee which, in our opinion, has the best knowhow and competencies in respect to conducting media surveys in Finland, while the enterprises have expected more initiative and opinions from us, as a neutral party, in setting clear-cut objectives and providing answers to and solving many of the research questions (see 3.1.1). However, a common understanding was made that as the project is extremely challenging and

³⁹ <http://www.ipa.co.uk/Content/TouchPoints-Site-Why-was-it-produced>

multidimensional, the slowness and perhaps the absence of a clear-cut mode of operation and objectives at the very beginning is somewhat explicable. We suggest that openness and cooperation in 2011 must be increased, by any means necessary. We as a group must come up with new methods of increasing openness and interaction in finding answers to the research questions, and figure out how concreteness and realism in relation to goal setting can be achieved.

When MOBIME was first initiated by VTT after the release of the “Media and advertising from now until 2013” research project in 2008, the media market response was excited but also sceptical in terms of whether the objectives could be accomplished. MOBIME as a project is enormous, and challenging. In respect of project objectives, the project budget for the first year was undersized. Thus, our objective for the first year was to get a general view of what kind of project we in fact had in our hands, what the objectives related to building an intermedia currency were, and how we should proceed in order to achieve these objectives. In hindsight, more precise goals should have been the primary task to be accomplished at the beginning of the project. Similarly, some tasks that were pointed out to us as being pivotal (such as the media currency test data analysis pilot) should have been executed sooner. However, the pilot tests have now started. The role of VTT in MOBIME is:

“The dissemination of project findings. Our objective is to define and synthesise information gathered from the parties in the steering committee in respect to what [information/data/tools/needs/methods] exists and what is lacking in the media markets, and what the technical possibilities that can be utilised in this project are. In sum, to get a common understanding on what is possible in terms of attaining our objectives. The purpose of the industrial representative interviews is to examine what information and data exists, what is lacking, and what user needs exist. On the basis of the interview findings our objective is to outline alternative implementation strategies.”⁴⁰

The aim of the Next Media Programme” is to speed up the development of new media content concepts and services and to create new international business for Finnish companies... This requires open-minded innovation and rapid development of cross-media concepts”⁴¹. Not only for Next Media, but also for the organisations involved in research projects, the development of services that generate new business should take place sooner, not later. This is not to suggest that there is nothing to be improved upon

⁴⁰ Fusion Workshop 29 June 2010 Minutes.

⁴¹ www.tivit.fi/fi/.../24/NextMedia_SRA_2009_05_20.pdf

in our procedures for next year, but to remind you all that it took almost two years and over one million pounds to develop the IPA TouchPoints survey in the UK. Thus, it is presumable that it is going to take some time and money also in Finland, since we have only begun our work on building an intermedia currency.

Because of the differing interest of the parties involved, the demands and involvement (in respect to person-months) varied greatly. In some cases, some of the key research questions should have been answered from the very beginning so as to ensure commitment on the part of all parties. However, answering the key questions, in our opinion, requires that all parties negotiate the terms together among them who owns or generates business from the end product. Here again, we as a group must come up with new methods of increasing openness and interaction in finding answers to the research questions, and must figure out how concreteness and realism in relation to goal setting can be achieved. The challenge is obvious: this is a public research project with public research results. One recommendation for 2011 is to invite more people from different project organisations with different knowhow and authority backgrounds to the project meetings so as to elevate the level of discussion and to determine what can and cannot be publicly stated. In addition, we must recruit the right people with the right skills from outside this project consortium in order to ensure the best possible project outcome. Increasing interactivity is a goal that should be supported by adopting new practices to complement steering group meetings, such as workshops, bilateral negotiations, interviews, and platforms for information/document sharing. The project consortium will triple its size in the coming year with new data owners joining the consortium, and the challenge of openness and interaction will surely not become any easier without making radical changes to our practices.

Last but not least, because of the deferred decisions from the main financier and having new practices in a new research programme, reporting/decision-making deadlines were often given at very short notice, which is obviously not an ideal solution in our busy world. For this we apologise! We will try to facilitate your lives in the coming year(s).

This was a challenging project to execute, but it is the opportunities and rewards that result from its success which lead us all forward.

Acknowledgements

This study was partly financed by the Finnish Funding Agency for Technology and Innovation (TEKES). The following companies participated in the study: Dagmar Oy, Finnpanel Oy, Sanoma Television Oy/Nelonen Media, Finnish Newspapers Association Sanomalehtien Liitto, and TNS Gallup Oy. In addition, a number of people devoted their time to interviews. The researchers are greatly indebted to these organisations and individuals for their support.

Appendix A: List of persons interviewed

Interviewee	Organisation
Arasto, Ullamaija	Finnish Audit Bureau of Circulations
Aalto, Anu-Riikka	VR-Yhtymä Oy
Beck, Jennie ⁴²	TNS Global
Bäckman, Erik	Yleisradio Oy
Griffiths, Graeme ⁴³	TNS Global
Hanski-Pitkääkoski, Ritva	The Association of Finnish Advertisers
Helske, Jukka	TNS Gallup Oy
Härmä, Tomi	Dagmar Oy
Häyrynen, Heini	Sanoma Television Oy / Nelonen Media
Itävuori, Saara	Finnish Periodical Publishers' Association
Kirjonen, Sirpa	Finnish Newspapers Association
Laine, Sinikka	TNS Gallup Oy
Lundström, Liisa	Dagmar Oy
Maste, Kirsi	TNS Gallup Oy
Mehtäläinen, Anne	The Finnish Association of Marketing Communication Agencies
Oilinki, Christel	Finnpanel Oy
Penttala, Antti	Finnpanel Oy
Rainio, Ilkka	TNS Gallup
Rantanen, Erkka	PHD Finland
Raulos, Mervi	Finnpanel Oy
Roponen, Seppo	TNS Gallup Oy
Sandell, Lena	Finnpanel Oy
Takala, Birgitta	IAB Finland
Törrönen, Heli	Kesko Oyj
Uljas-Ahl, Katariina	Dagmar Oy

⁴² Interviewee from the London Study Tour, 9– 13 July 2008

⁴³ Ibid.

Vyyryläinen, Jaana	Outdoor Finland
Vähäsalo, Anna	JCDecaux Finland Oy
Öström, Virpi	TNS Gallup Oy