INTEGRATING ADDITIONAL DATA INTO ORVESTO CONSUMER

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Introduction

The challenge to maintain sample quality in NRS type print surveys has never been greater with rapidly and differentially declining response rates. We can little afford to aggravate this situation by acceding to demands for more and more data 'single source' from the respondent. Increasingly we will be faced with having to treat our primary quality sample/interviews as more of an establishment survey providing a 'skeleton' onto which we subsequent 'hang' a wide range of additional data collected via cheaper means with less rigorous sampling and more convenient research designs.

This paper provides two examples of integrating additional data into a 'base' survey. In both cases the 'base' survey (Orvesto Consumer) had been designed to include data that could provide a firm basis for the data integration.

In the first part of this paper we report a case example of extending the Swedish NRS (Orvesto Consumer) to include 'quality readership data' (QRS). The approach described can be used generically for integrating additional (quality of reading/viewing/visiting) data collected more economically on-line. In this (multiple) ascription process the inherent sample and design issues associated with Internet based research were largely neutralised.

The issue of the 'engagement' level provided by different print media led to a demand on the Swedish NRS (Orvesto Consumer) for much greater behavioural and attitudinal information from readers about each title and the advertising it carried. This information however had to be available within the 'quantitative' reading and target group information of the NRS itself and function within the normal media planning process.

We look first at the Internet QRS design, the biases introduced and how they were 'undone' and neutralised in the integration process into the NRS (which involved a separate ascription for each of the 260 or so titles). We then look at how well the ascribed data on editorial and advertisement interest matched with the subject interest data already in the NRS as well as how this can now used in the normal media planning process in determining differential ad. exposure and 'engagement' values between titles.

Quality Readership Survey

Sifo's Quality of Reading Survey was conducted in the first half of 2006. SIFO also mounted a second similar study a month or so later that relates to the Orvesto Business survey. The processing of this Business study was very similar to the main study.

An 100,000 e-mail Access panel was mailed with a readership and basic demographics/interests questionnaire and asked is they would participate in a further Internet based survey about their usage of and attitudes to magazines they read. This yielded a response of around 40,000 respondents. These respondents were then re-interviewed on-line with the detailed quality of reading (QRS) questions. In all 244 magazine titles/magazine inserts in newspapers were researched for the Orvesto Consumer Survey and a further 105 titles in the Orvesto Business survey.

The quality of reading data collected included:-

- Interest scale questions for a wide range of topics
- Number of pick-ups
- Source of copy
- Proportion of issue read
- Where normally read
- Time spent reading
- Number of occasions picked up
- 'Q' rating (one my favourite titles)
-
- Magazine score out of 10
- A title that 'I would turn to first'
- 'the degree to which I would miss it if it ceased to be published'.
- Degree of agreement scale for a list of 20 magazine attributes (included advertising attributes)
- 5 qualities that best describe the magazine (out of 27 statements)

For reasons of respondent fatigue and relevance it was decided to ask the detailed QRS questions for ***a maximum of 3 titles*** however many titles the respondent reported that they read (in phase 1). Reading was defined as reading ***at least 1 of 4 issues***. That is to say the large number of 'almost none' readers (a scale position on the standard Orvesto reading frequency scale) were filtered out. Thus we had no direct QRS information for these people. Note that the Swedish NRS bases its average issue readership solely on the reading frequency claim and does not collect reading recency.

In order to provide a reasonable QRS profile for *all* titles it was decided that a minimum sample of 200 was required for *every* title. To ensure this sample minimum and the random selection of 3 titles (if more than three titles read), informant order in the data file was first randomized. Then the readership of informant 1 was examined. The first title to be selected from the list of titles read was the title with the largest overall readership (in the population). The second title selected (from those read) was the title with the smallest overall readership. The third title selected was the title closest to the average of the reach of all titles read. The process was repeated for all informants. A count was kept of the number of responses for each title. When a title had reached 200 responses it was removed from the eligible selection list.

This design proved to be a practical way in which to collect the volume of reading quality data required from a large sample base. However, to provide comparable analysis between titles on the basis of average issue readership that matched with the Orvesto Consumer level required some further processing of the data. The **key ascription issues** were:

1. To bring readership into line with Orvesto estimates the reading quality behaviour of the 'less than one out of four readers' frequency group was required as this group is used in the estimate of average issue reach in Orvesto.

2. The samples between titles are not comparable since heavy readers (those reading many titles) are under-represented differentially in the sample of each title. Remember that each person only answers of a maximum of three titles. This needed to be compensated for.

3. The Internet access panel is not representative of all adults. This affects the profile of titles differentially. Again this had to be compensated for.

In order to correct these sampling scheme/sample biases we have **ascribed** these QRS data into the whole of the Orvesto Consumer sample which has the correct all adult population structure. This ascription thus immediately provides the compensation required for key point 3.

Ascription is the process whereby we fill in data 'missing' from a respondent. QRS data is 'missing' because some eligible people on the access panel did not respond to the QRS questions. More important the Orvesto Consumer respondents, not exposed to the QRS questions, had to have QRS data ascribed. In other words the data needed to be ascribed firstly horizontally along all the titles in the QRS and then vertically bringing the QRS data title by title into the NRS.

Ascription proceeds by assigning missing data from a donor, who does have the information, to a **matching** donee for whom the data is missing. The choice of matching donor:donee pairs is accomplished by describing 'closeness' using defined ascription parameters. The choice of appropriate closeness parameters is absolutely crucial to the success of ascription. In this QRS instance we were able to define and use very efficient parameters and ensure an excellent match between donors and donees.

This ascription had to be, and was, performed separately for each publication. This ensured that the ascription of each title used the maximum information possible.

The sample for any publication on the QRS is restricted to 200. For the larger/better read publications the donee:donor ratio is rather large, but manageable with our sophisticated ascription techniques. We have ensured that with the ascription parameters given we have made the best possible use of the QRS data, but for the uninterested in Internet/ older group the information we have is not as strong as for the bulk of respondents.

The (rather time consuming) separate ascription per publication ensures that each publication included in the study has an excellent donor base. More usually ascription proceeds collectively for all the ascribed data items but this was not suitable for QRS data.

Our first matching parameter is based on the frequency question answers for donors:

3:Circa 1 out of 4 copies (of this publication)
4:Circa 2 out of 4 copies
5:Circa 3 out of 4 copies
6:Almost all
7:All

and the selection of matching *donees* from the frequency question answers:

2:Almost none
3:Cirka 1 out of 4 copies
4:Cirka 2 out of 4 copies
5:Cirka 3 out of 4 copies
6:Almost all
7:All

Where possible any donor:donee pair is matched to have the **same** frequency response. The main exception was that there are no 'almost none' donors. They were excluded in the study design. 'Almost none' donees are therefore matched with '1 of 4' donors. This matching provides complete compensation for key point 1.

Apart from this frequency question the remaining ascription matching parameters are the same for each publication. The parameters are 'Number of publications read', 'Age Group' and 'Education. The 'Number of publications read' parameter ensures that key point 2 is addressed and that heavy reader donees are only matched with heavy reader donors.

The very good donor:donee ratio, the use of the detailed frequency question, the discrimination by the ascription parameters and, above all, the fact that the ascription is done separately for each publication ensures that the QRS data on Orvesto Consumer can be used with confidence.

A further key point (4) is not strictly involved with ascription but was essential for correct interpretation of the QRS data.

4. To create average issue reach (rather than 'any' issue reach) for between title comparisons. Effectively this requires that the ascribed QRS data used (in CrossTabs for example) has to be weighted by the probability of reading. Otherwise the contribution of infrequent readers is overvalued in analyses: the contribution of frequent, high-probability, readers is undervalued.

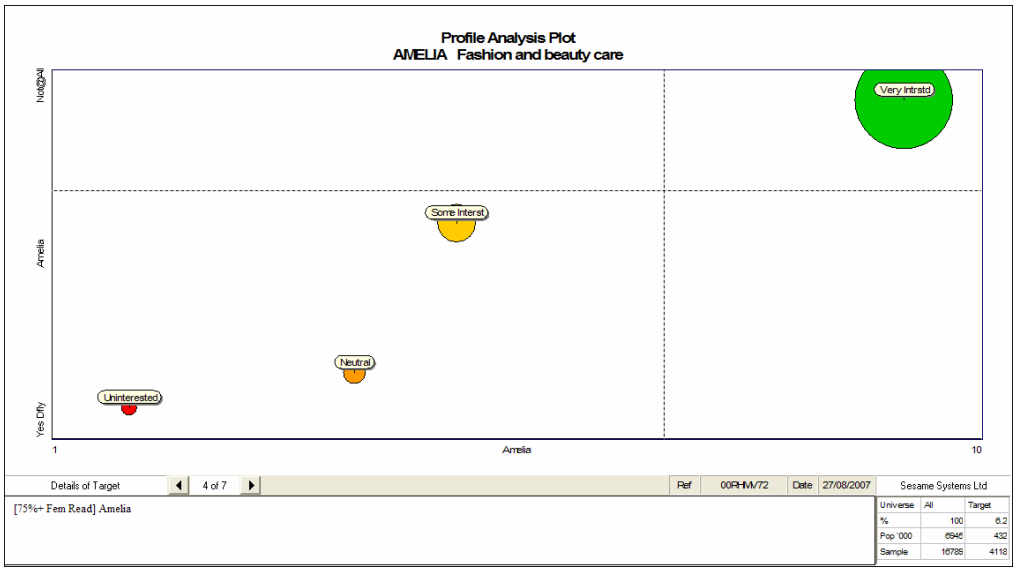
Evaluating the QRS integration.

Orvesto Consumer classifies responded by their degree of interest in a wide range of subjects. We can get a good view of the accuracy of the ascription by comparing the subject interest profile from the original Orvesto Consumer data with the rating score for titles covering those subjects ascribed from the QRS Internet survey.

In the profile maps below the base is always the (average issue) audience of the title. The horizontal axis represents the magazine's liking score out of 10 (runs from 1 to 10) and the vertical axis the magazine's score on the degree to which advertisements are read (runs from 'Very definitely' to 'not at all').

Against these axes the position of respondents is plotted according to their interest in particular subjects. In the first two cases this is interest in beauty care and in the second case interest in motor sport.

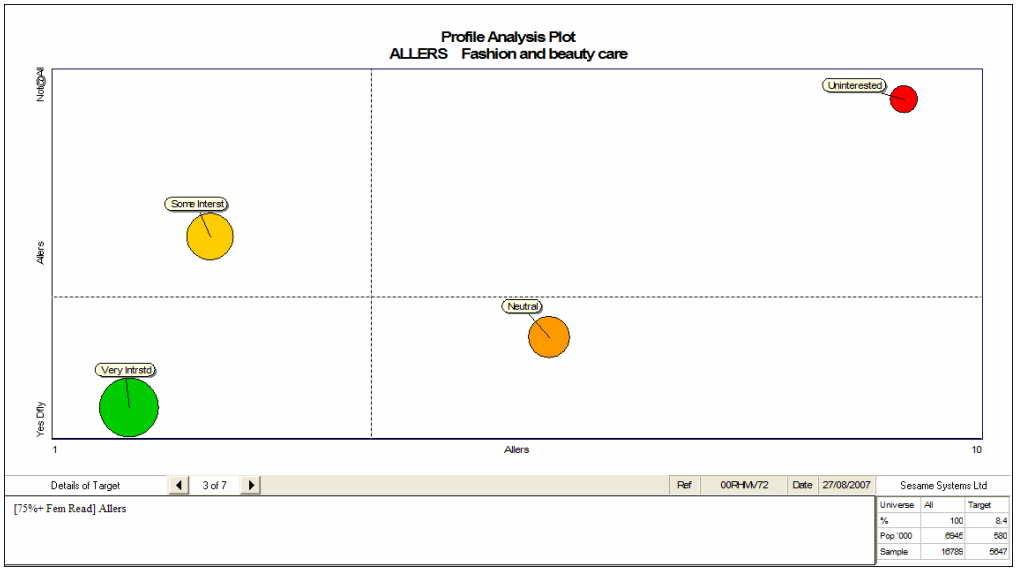
Table 1	Base pop		**Intr:Beauty/hair care**			
			Not Interested	Neutral	Some Interest	Very Interested
Pop profile	6945	100	24.6	22.6	20.9	32
	'000	**Prf>**	**Prf>**	**Prf>**	**Prf>**	**Prf>**
Amelia	432	100	8.4	11.2	20.9	59.5
Allers	580	100	12.5	18.3	22.7	46.4



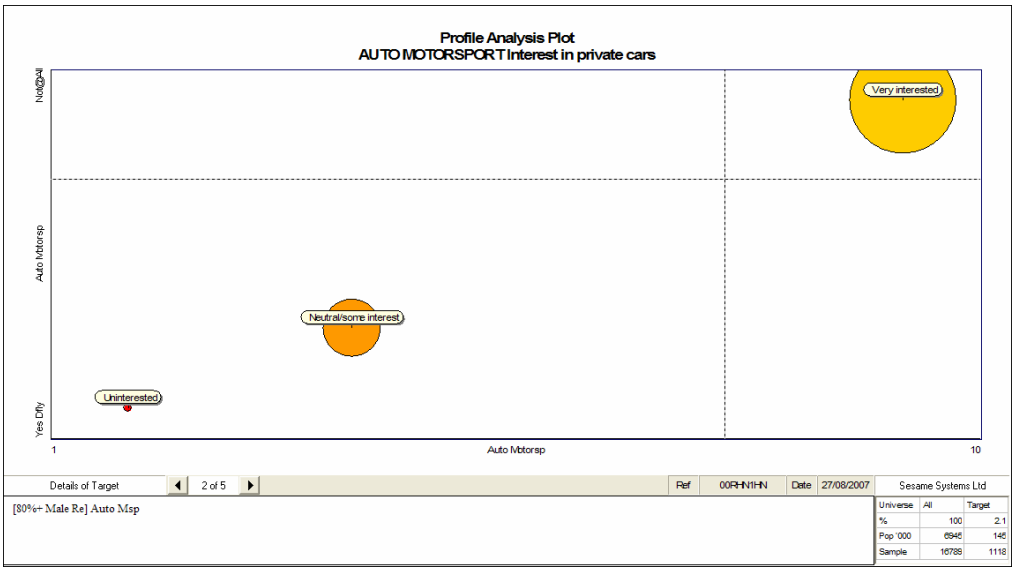
Amelia is a modern youngish people relationship's magazine with a strong editorial emphasis on fashion style. Nearly 60% of its average issue audience are very interested in beauty care. (The relative size of the interest segments is shown by the size of the circle in the profile plot). There is an almost straight line correlation between interest in beauty care and the magazine liking score which is to be expected and gives considerable confidence to the ascription.

What is particularly interesting however is that those who are very interested in the fashion and beauty care and who rate the magazine very highly do ***not*** score highly on reading the advertisements. It is the largely uninterested/neutral (20% of the readership) who 'very definitely read' read the advertisements.

This contrasts with Allers which is a traditional and older women's magazine with editorial around cooking, home care, puzzles, stories and health. The proportion very interested in fashion and beauty is a lot lower than for Amelia (46%) although it is still above the population average. In this case there is a reverse correlation between the magazine liking score and interest in fashion and beauty which again is to be expected. In this case however it is those readers who are very interested in fashion and beauty who very definitely read the advertisements.



We can see very similar results in many other interest categories. The following example is for motor sport and Auto Motor Sport Magazine



In this case we again see an almost straight line correlation between interest in private cars and the liking score for Auto Motor Sport Magazine. Equally the 86% of it profile who are very interested in private cars claim to 'not at all' read the advertisements. This contrasts to the 14% neutral or not interested in private cars whole claim much more definitely to read the advertisements.

This of course challenges the traditional 'rub off' argument and supports the concept that advertisements and editorial are very much in competition. Where the editorial is focussed on a particular interest this is what the readers with high interest in that subject will focus on. Where the editorial focus is different or more diffuse then those with a high interest will read more of the advertisements.

Many of the Swedish QRS findings correlate strongly with those found in other markets. For example as much as 35 % of the reading opportunities of magazines originated not from single copy sales, subscriptions etc but originated from "sources" that could be said to be outside the control of the publisher.

The average proportion read of a magazine was 79 % with an average of 2.9 pick ups. The average time spent reading was found to be 40 minutes but ranged between from 16 to 69 minutes.

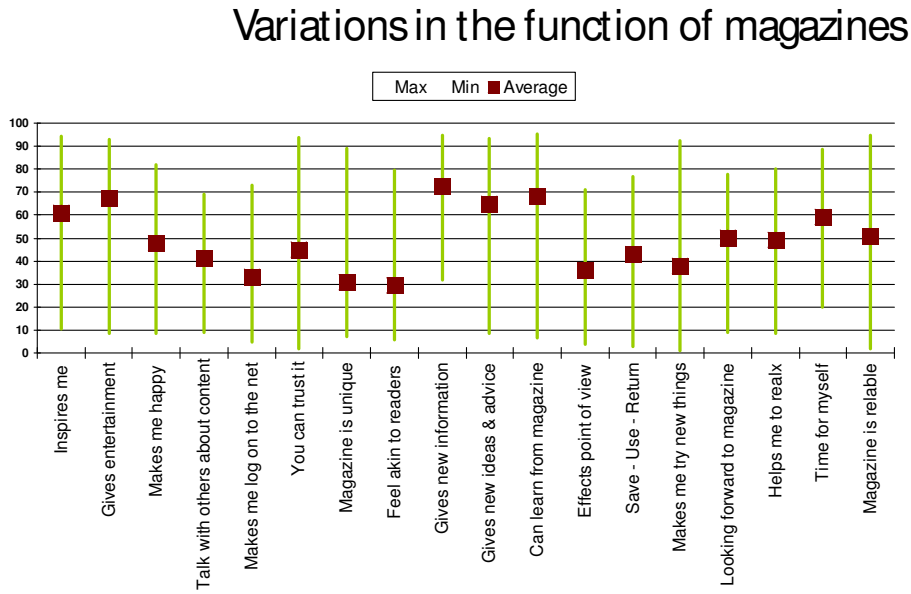
The variations between magazines were huge in terms of relationships with the advertising. While the average score for "enjoy reading the ads in the magazine" was 48 % the top title reached 88 %. Ads in the magazine inspire me averaged at 26 % with one title reaching 68 %. "Ads in the magazine give me good information" averaged at 36 % with the top scoring magazine at 72 %. It is quite interesting not to look at the averages but at the top results and reflect upon the fact that this is how good it can be when the readers correlate strongly with the target group and the function of the magazine and the editorial environment supports the advertisement.

The average liking score over all magazines was 6.7 (out of 10) with scores ranging from 5.1 to 8.0. The data quite nicely confirms the obvious that readers will not keep reading a magazine they themselves do not find to their liking.

Regarding the questions concerning the 5 most descriptive statements to each magazine, the following five were the top scorers and could in a sense be described as the overall characteristics of magazines: 1) Informative 2) Extensive 3) Relaxing 4) Up to date 5) Inspiring.

But the five statements with the largest variation between titles were the following: 1) Informative 2) Useful 3) Glamorous 4) Trustworthy 5) Analytical.

If a planner needs to place his ad. in an environment which is seen as glamorous or trustworthy etc. the data can be used as an up or down weighting factor in the title evaluation.



Looking at the range of the reader's attitudinal statements it becomes very obvious that the diversity of magazines is enormous. It is very hard to describe a magazine from an average point of view. Each magazine is unique in its function and its relationship to its readers. Hence it becomes a necessity to both have broad and deep information on each title to understand the magazine market.

With this QRS data integrated into Orvesto Consumer the planner is in a position to qualify the basic AIR measure. He can use the proportion of issue read or time spent to reduce the issue audience title by title to an average page exposure or average time per page measure. He can then weight that measure to allow for (within target group interest in the product area) differences in reading advertisement claims for different titles. None of this could have been done if the data had not been integrated in the NRS and put into the everyday planning environment of the media planner. A QRS survey without the linkage would have had merely academic interest and not been of real use.

Internet panel integration

The second example relates to the integration of Internet panel data into the Orvesto Consumer survey. Newspaper publishers are becoming increasingly (news and views) content providers distributing their content through paper and a variety of electronic formats with a need to sell (advertising) across the combined delivery.

Foreseeing this need the Publishers in Sweden required that the Internet site panel measurement be integrated into the Swedish NRS (Orvesto Consumer) to enable the combined Press/Internet reach and contact frequency within target group to be evaluated.

To this end the Internet panel respondents were recruited from previous interviewees of the Orvesto Survey over the last 18-24 months. The main advantage of this is that the Orvesto sample which is updated 3 times a year provides an establishment survey to which the panel respondents can be weighted/projected. While it also means that all media, demographic, product behaviour and attitudinal data is available for each panel respondent, this information is out of date and will not match with the current Orvesto release.

It was therefore necessary to integrate each period of Internet results into the current Orvesto Consumer release. For reasons of data stability it was decided to release Internet results for an average week of four weeks from each month making 12 Internet data releases within Orvesto Consumer over the year.

Decisions had also to be made as to what constituted an OTS for Internet bearing in mind that within Orvesto Consumer comparisons would be made with both print and TV/radio data. 'Page views' was considered to be too broad a definition in relation to the OTS definition for print and to TV. It is the authors' firm belief that the definition of what is an OTS might and should change (and the planning system need to cater for this) depending on if the planner is planning a single media campaign or a multi media one. To perform multi media planning means that we need to find a common ground from where the planner will take over.

While the print measure (OTS) relates to exposure (read or look at) to any part of the issue it does not include multiple reading events. In the case of TV respondents claimed presence for the minute in which the advertisement is screened give rise to the TV OTS. The Internet panel data was able to provide us with fairly complete start and stop data for each Internet site visit. (Certain rules had to be applied where stop data was absent and what constituted a new event when moving between sub-sites). This enabled the determination of the average time spent in any quarter hour on a site/sub-site and therefore the ability to introduce the TV concept of a rating point (a GRP being 1% of the (target) population being present during 60 seconds).

The following table indicates the levels (in italics) at which we have incorporated OTS measures into Orvesto Consumer for the different media. It is clear that adjustments to the OTS definition still need to be made by the planner at analysis time.

Opportunity to See (OTS) defined as number of people who:			
Press	Internet	TV	Radio
Read any part of 'average' issue, multiple readings excluded	**Browser 'hits' page on which ad is served. Each hit clocks up**	**Viewed any part of segment (7.30-7.45)**	**Listened any part of segment (7.30-7.45)**
Passed through spread with ad. (page traffic)	*Presence of browser on site for a given time period (60 seconds) in 15 minute segment*	**Viewed break in which commercial placed**	*Listened to 5 minutes in which commercial placed*
Ad. visibility potential rating (Size, colour, position, edit and other ad. interference)	**Ad. visibility potential rating (Size, colour, position, edit and other ad. interference)**	*Claimed presence during minute of ad screening*	**Implied presence during minute of ad screening (if ppm measurement)**
Eyes on ad. probability	**Eyes on ad. probability**	**Actual presence rating (in room)**	**Actual presence rating**
Action – Reject or read	**Action – Reject or view/click through**	**Action-Reject or view**	**Action-Reject or listen**
At this moment the 'force' of the medium and advertisement relevance of/interest takes over to create actual engagement = Response Model			

Virtual Diary creation

The integration was achieved by creating a Virtual one (average) week Diary for each Orvesto Consumer respondent such that the viewing claims, when accumulated for all (weighted) informants yield the reach results for each site by average minute, ¼ hour, broad day part, day and week as reported by the Internet panel control data (for that period).

This matching to the 'control' data is known as the calibration. Control statistics were set up for 13 population cells determined to differentiate Internet browsing behaviour. The population cells used were as follows:

Table 2	**Internet**	**Internet access**		
Work	**Hrs pw**	**Home & work**	**Home not work**	**Work not home**
Full time	under 2	1	2	3
	2+	4	5	6
PT/student	under 2	7	8	9
	2+	10	11	
Not working	under 2	12		
	2+	13		

The degree to which we are able to match the control cell data in the calibration is very high and can be seen in Table 3 below which reports two very large sites and a number of quite small sites/sub-sites. Our ability to match exactly the control data depends on sample size and the level of informant weight involved.

Table 3 Orvesto 2007:1 July Internet data	Base Cell 4	Full time and self employed 2 hrs+ on line per week access at home and office								
Site	**Week reach**		**Av day reach**		**Segment reach 1000-1400**		**1/4 hour reach 1000-1015**		**Av mins on site Wed 10-14.00**	
	Panel	**Achieved**	**Panel**	**Achieved**	**Panel**	**Achieved**	**Panel**	**Achieved**	**Panel**	**Achieved**
	%	%	%	%	%	%	%	%	Avg	Avg
Aftonbladet Total	41.0	41.1	18.9	19	13	13.2	2.6	2.2	19.7	19.9
Expressen Total	22.0	22.1	8.2	8.2	4.6	4.4	0.8	0.7	12.5	12.4
Automotorsport Total	0.4	0.5	0.1	0.1	0.1	0.2	0	0	0.1	0.1
Ab.se/Bil	2.5	2.6	0.4	0.4	0.1	0	0	0	5.9	0
Ab.se/Mode	4.5	4.6	0.7	0.7	0.3	0.6	0.04	0.1	4.3	4.2

Had we relied solely on this segmentation and the calibration levels within the Panel control cells our results would have been no better than an ascription. However within the Orvesto Consumer survey respondents had reported their recency of visiting each site and sub-site which meant that we could control very precisely who is eligible to have any record of visiting a site within the week[1].

Accuracy using non-cell-defining variables

Both calibration and fusion use a limited number of variables to define the matching, but in very different ways. In fusion members of the two surveys are matched according to their closeness on the matching variables. It can be that, towards the end of the fusion, two individuals can be 'matched' who are not similar at all. There is *no* control over non-matching variables. One hopes that the non-matching variables correlate reasonably well with the matching variables, but it is a hope not a checked requirement. Detailed fusion checks show that this correlation works quite well 'most of the time', but can be very erratic or plain wrong.

In calibration the defining target cells are all important. We do not ascribe viewing levels (say) within a target cell outside that cell. This contrasts with the possible mismatching towards the end of the fusion process. Calibration has a similar but much smaller 'correlation of non-target variables' problem, but this is very much minimized when we have, which is usual, the Internet/TV/radio visiting/viewing/listening information described above on the Base Survey.

Table 4			Ab.se		Exprn.se		Autosprt.Se		Ab.se/Bil.		Ab.se/Mode	
	Base Population		Base Survey	Panel calibrated	Base Survey	Panel calibrated	Base Survey	Panel calibrated	Base Survey	Panel calibrated	Base Survey	Panel calibrated
Sample	16484		3673	5231	1714	2775	53	66	111	344	138	560
Pop 000	7073		1740	2374	791	1241	31	41	58	156	69	273
	Prf^	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**	**Idx**
Rather/very interested in:												
Motor Sport	17.4	100	100	103	103	100	289	267	244	241	41	79
Computers	38.7	100	140	129	138	125	155	159	182	166	103	117
Hair Care	31.1	100	90	95	90	97	64	71	65	65	206	181
Life Values segment												
Experiencers	13.4	100	129	122	124	113	68	98	150	116	171	151
Traditionalists	12.5	100	72	78	87	90	59	51	43	63	38	46
Independents	12.5	100	109	109	109	112	147	163	116	122	103	105

Note: Index of Selectivity (Indx) is given by the profile of the site (50.3% of Automotorsport are interested in Motor Sport) divided by the population percent interested in Motor Sport (17.4%) times 100 (=289).

Table 4 above indicates how well this calibration of the Internet panel data to the Base Survey (Swedish Orvesto Consumer 2007:1) has performed in retaining non-target cell selectivity. Orvesto Consumer provides a measure of respondents interest in a wide range of topics. We have chosen 3 as indicative; Interest in Motor Sport, Computers and Hair care. Orvesto also provides a socio-cultural segmentation (Life Values). We have chosen 3 of the 9 segments for demonstration: Experiencers, Traditionalists and Independents.

[1] A more detailed description of the calibration and VDiary creation can be found in Annex 2 of the paper at the Vienna WWRS 2007 entitled 'Real cross media Planning for television and magazines' by Cools, Hermie and Masson.

The table compares original 'single source' site daily visitor profiles for the (non control cell) selected target groups in relation to these same profiles post calibration. *(While this provides a good indication of any regression to the mean, it is not a perfect comparison as the samples compared are not identical. This is because the calibrated reach level based on the panel results can be considerably different from the initial recall reach levels. In the case of the major sites the panel data is some 50% higher and for the smaller site as much a 3 times higher. This is a clear indication of the impossible task of measuring Internet reach accurately with a recall study. This might work on some specific sites with a URL strategy that supports it and on some sites, but in most cases the reach figures in a recall study will be plain wrong. Internet reaches need to be measured technically.*

The indices match very well. There is no real indication of regression to the mean and, as the calibrated indices are both above and below the Base Survey profiles, any differences are more likely to be a function of the differences in panel and recall reach levels and to sample variance particularly for the smaller sub-sites.

Daily reach of dailies

Average issue measurement of newspapers does not reflect day by day variations in audience size and structure and significantly limits the ability to make a realistic day by day assessment of the combined Internet and newspaper delivery.

In addition the use of the normal binomial convolution model produces very poor estimates of reach accumulation when insertion are placed day by day (indeed the binomial takes no account of timing of insertions) since these reading events are by no means independent.

We solved these issues by duplicating the readership for each day of the week and adjusting the relative overall levels (by probability adjustment) for each day to match levels established by an independent telephone study using day after recall and by introducing a conditional probability model to provide much more realistic estimates of net reach accumulation[2]. We are currently planning to improve this methodology by creating a Virtual Diary week for newspapers.

This means that with the Orvesto Consumer data base we are able to define readership of dailies day by day for analysis alongside the integrated day by day Internet panel data.

The following is a case example:

Three equal budget schedules were developed, the first was print only (evening newspaper), the second was the Internet site only of that same evening newspaper and the third a roughly equal budget split between the newspaper and its Internet site.

Table 5 Input	**Insertions**			**Cost**	**Standard**
Segment/title	**Sched 1**	**Sched 2**	**Sched 3**	**Sek**	**Rates**
Evening (Wednesday)	1	0	1	120000	C 1/2
Evening (Thursday)	1	0	0	120000	C 1/2
Evening (Friday)	1	0	1	140000	C 1/2
Evening (Saturday)	1	0	0	100000	C 1/2
Evening.se / Total Wedn'day 06:00-06:00	0	125	57	1019	banner
Evening.se / Total Thursday 06:00-06:00	0	125	57	1008	banner
Evening.se / Total Friday 06:00-06:00	0	125	57	1127	banner
Evening.se / Total Saturday 06:00-06:00	0	124	58	696	banner
Total cost: Sek	480000	480537	480138		

Of course it is not normal to think of 'insertions' on the Internet. Planners would normally specify to buy a proportion of the browser 'hits' to which the ad would be served. This translates in the rating point scenario to the proportion of minutes available in the day. There are 1440 in total so that 125 'insertions' will provide that (125/1440*100 =) 8.6% of the browser 'hits' are served with the ad.

[2] This methodology was reported in detail in the paper entitled Measuring the 'Daily Reach of Dailies and newspaper sections' at ESOMAR/ARF WAM conference in 2002 by Ingemar Lindberg, Paul Sumner and Peter Masson

Table 6 Output- Schedule evaluation Target: visit McDonalds at least once per quarter	Sched 1	Sched 2	Sched 3
Gross reach %	92.5	173.5	126.5
Net reach %	23.9	22.8	30.4
Ave ots	3.9	7.6	4.2
C.P.T.gross	163	87	119
See 3+	12	18.4	12
See 5+	0	13.9	9.2
See 7+	0	10.6	6.3

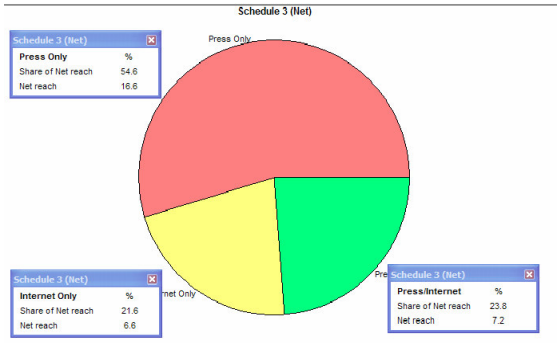
Orvesto Consumer 2006:2/Sesame

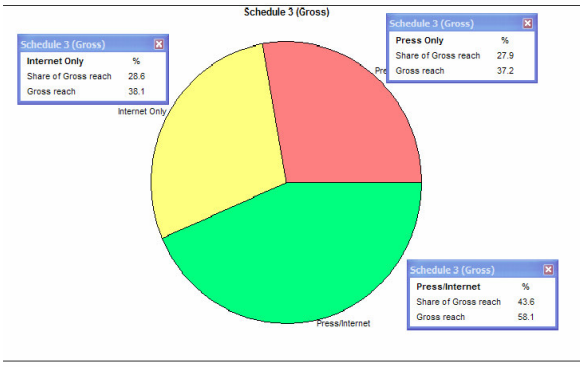
The press schedule 1 and the Internet schedule 2 deliver approximately the same Net reach but in combination (schedule 3) the target reach increases by over 30%. The first argument for a combined schedule is therefore a significant increase in Net Reach.

The Internet schedule 2 offers much higher gross OTS (of a banner compared to ½ page colour in the newspaper – which must be considered by the planner) but possibly delivers an unnecessarily high proportion of the net (46%) seeing 7+ in the 4 day period. The combined schedule offers arguably a better balance of reach and frequency and this is the second argument for a combined schedule.

The contribution to both the Net and Gross Reach by each of the media can also be determined. The Gross reach contribution pattern is quite different from Net Reach contribution with a far larger proportion exposed to both media (24% of the Net audience see both media compared to 44% of the gross contacts).

Media contribution to Gross and Net Reach





To these first two arguments can be added an ***'imperative'*** argument namely that the exposure distribution by weight of Internet usage is far better balanced when in combination with print.

In the following table we can see that the Internet only schedule 1 delivers only 11.6% of its gross contacts to 'never and non daily' users of the Internet who represent 26.1% of the target group. The combined schedule 2 improves this situation considerably and delivers 18.9% of its gross contacts to this 26.1% sector of the market.

Table 7 Output Profile %> Target: visit McDonalds at least once per quarter		Frequency Use Internet			
		Never	**Monthly -**	**Weekly+**	**Daily+**
Population '000	100	5.9	5.9	14.3	73.9
Sch 1 Internet only					
Gross reach	100	0	2.2	9.4	88.4
Sch 2 Print/Internet					
Gross reach	100	3.2	4.3	11.4	81.2

Many morning newspapers show an ageing profile with increasing numbers of younger readers taking the material on-line. Publishers need to be able to demonstrate that the combined delivery, Print/Internet will provide a better balanced age distribution compared to the newspaper alone. The following example is for a Swedish daily morning newspaper using the following schedule:

Table 8 Input **Segment/title**	**Inserts** **Sched 1**	**Inserts** **Sched 2**	**Cost** **Sek**	**Standard** **Rates**
Daily morning (Wednesday)	1	1	70000	C 1/2
Daily morning (Thursday)	1	0	65881	C 1/2
Daily morning (Friday)	1	1	65881	C 1/2
Daily morning (Saturday)	1	0	60000	C 1/2
Dm.se / Total Wednesday 06:00-06:00	0	470	108	Banner
Dm.se / Total Thursday 06:00-06:00	0	470	82	Banner
Dm.se / Total Friday 06:00-06:00	0	470	55	Banner
Dm.se / Total Saturday 06:00-06:00	0	470	26	Banner
Total cost: Sek	261762	262593		

Table 9 Output-Profile % **Target: All**		**Age** 15-24	25-39	40-54	55-79
Population	100	16.1	25	26.3	32.6
Sch 1 Print only					
Gross reach	100	11.2	24.4	25.5	39
Sch 2 Print/Internet					
Gross reach '000	100	12.5	32.2	23.2	32

In the first print only schedule the 15-24 group are seriously underrepresented and the 55+ heavily overrepresented. The combination of the print and Internet schedule 2 redresses the situation bring down the over 55+ profile into line and placing the emphasis on the important 25-39 group plus making a limited improvement in the 15-24 group.

In summary the integrated print and Internet base provides publishers and planners the tool to evaluate combined schedules of print and Internet. The arguments for a combined delivery are increased Net reach, a better distribution of frequency (less overkill) and better distribution by weight of Internet use (less heavy users) and by age. Of course these metrics have to be assessed/adjusted in the light of differences in the OTS definition and in the 'effect' of receiving a press exposure (1/2 page colour) and a Banner (with click through capabilities) and of receiving them in combination (synergy effects). But planners and publishers now have a firm statistical base in Orvesto Consumer on which to test the impact of such qualitative 'effect' judgements.

Conclusion

These two cases have shown how one base survey, serving as a 'skeleton' onto which new surveys/data have been 'hung' using robust and sophisticated statistical merging methods, has been very effectively improved enabling far greater possibilities for advanced media planning, buying and selling in Sweden.