APX - THE NEW DEUTSCHE MARK IN PRINT MEDIA BUYING

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Summary

The first report of average page exposure data as part of the official German Media Analysis, in the summer of 1992, marks a further milestone on the way to a fair inter- and intra-media comparison. At the Salzburg Symposium, we reported for the first time on the "Quality of Reader/Reading" approach in Germany and called it "Yardsticks for Exposure Quality". In Hongkong, at the Fifth Symposium, we outlined a schedule for the final phase - and we almost met its requirements. Henceforth, Average Page Exposure (APX), or Seiten-Reichweiten as we call it in German, will be a constituent part of the German MA.

The sometimes tortuous path from the distant beginnings to these final stages has been reported at the various Worldwide Readership Research Symposia. To avoid redundancy, we will keep historic reviews to a minimum and concentrate on the results of 1992. There is, however, a very comprehensive German language brochure, written by Peter Beike and published by AG.MA, which describes the evolution in detail and is recommended to anyone with a serious interest in this topic. In fact, this paper follows the structure of Peter Beike's MA brochure.

Contrary to the often heard assumption, APX scores do not distinguish between titles more than AIR scores, first analyses do show that comparisons of Gross Coverage differentiate between titles, independent of budget sizes.

Recapitulation

As reported in Salzburg, in the early 80's German agencies and advertisers pursued the idea of going beyond the usual vehicle contacts, such as basic AIR scores, trying to establish exposure scores to the advertising itself. The idea behind it was a belief that coincidental or casual vehicle contacts would deliver a lower chance of exposures to the advertising messages than intensive contacts with the vehicle. In other words: pass-along contacts are less valuable than primary contacts, a concept discussed recently in the U.S. as the "core-reader" phenomenon.

Among the 35 initial quality variables tested in the early stages of this ongoing work was the "amount read". This turned out to be a key variable, based on the theory that the probability of exposure to an advertisement is improved if the page with the advertisement is opened.

This meant that we only had to find the answer to the question, "with what probability will an average page of an average issue of a publication be opened?" Easy question, difficult answer. It took several years to arrive at a broadly accepted answer.

As presented in Hongkong, the basic scale for "amount read" was:

- almost no page
- only few pages
- approximately a quarter of the pages
- approximately half of the pages
- approximately three quarters of the pages
- all, nearly all pages

This scale was used in one third of all interviews of the German MA 1989. All respondents, qualifying as broadest audience of a publication, had to answer the set of questions relating to exposure levels. Unfortunately, as a result of the placement of these additional questions, the interviewers or interviewees or both smelled the rat and produced lower reader claims, thus avoiding the extra questions.

The MA learned the lesson and included all extra questions in a parallel sweep to the official MA 1990. The reader claims established in the parallel sweep were to be adjusted or fused to the official MA, therefore, allowing room for a number of experiments, such as APX (Average Page Exposure) and MPX (Multiple Page Exposure).

To arrive at probability scores for APX (and MPX), the carrier contact probabilities for the MA publications, as established within the "official" part of the MA had to be balanced with the page exposure score from the amount read scale. 1990 we used "literal" translations for the individual scale steps:

- almost no page	5%
- only few pages	10%
- approximately a quarter of the pages	25%
- approximately half of the pages	50%
- approximately three quarters of the pages	75%
- all, nearly all pages	100%

The "literal" weights were only provisional aids, special reading/noting research for individual titles showed considerable underclaims for the lower positions of the scale and overclaims for the higher positions. Unfortunately these were neither balanced nor consistent for various titles. (Hongkong: Getting at the message!) Therefore, an ascription based on empirical results for individual scale steps was needed, similar perhaps to the model used in the survey TZ '90 (TZ = Daily Newspapers).

The results of this survey started a new discussion within the committees of the MA. They called for a special "calibration" procedure.

Calibration in German research terms means "defining the 'real' amount read", corresponding with individual steps of the verbal scale. The next logical question then was: Calibration, how? What tools are best suited for this procedure?

Obvious tools were Starch-like reading/noting surveys, however, earlier research has shown that the Starch approach had weaknesses, too. Apart from the handling problems, there are difficulties in applying it to all the publications in the MA. Hence, the first thing to determine was whether the Starch-scores really reflected the number of pages opened for different publications and different reading situations?

To answer this, the MA commissioned the so-called Validation Study

The results of stage 1 were presented to the technical committee of the MA four weeks prior to the Hongkong Symposium.

Stage 1: Observation of Reading and Starch Scores

In this test, the respondents were invited into a test studio, where they were observed and recorded on video tape, picking up publications, leafing through and reading them. The sample included 40 respondents each for 7 titles from the most important categories. The respondents had to be representative by sex, age and reading frequencies for the broadest audience of these titles and were preselected.

Half of the sample were asked into the studio for a second time, to validate possible multiple page exposures. The reading noting studies followed three days after observation by means of an interview in the household of the respondents. The test issues used were pre-publication copies and the interviews completed before the actual publication was on sale, thus eliminating possible contacts outside the test studios.

The crucial questions in this personal interview were:

- how many pages of a specific publication were opened altogether,
- on how many pages did the respondents read or notice anything (qualified noting),
- how many pages were been opened more than once?

These answers were checked against the observation results recorded on the video tapes. On the tapes not only the opening of the pages was registered but also the amount of the time spent looking at the page, hence the exposure time.

Results: On first sight a rather promising cross tabulation as Table 1 reveals.

Table 1: Observation versus Starch Scores

	Observation	Starch
	%	%
Share of pages opened	77.1	78.4
Share of pages on which something was read or noted	47.1	34.7
Share of pages opened more than once	8.0	9.6

The share of pages opened shows a good match between observation and Starch scores. The second line however, describing qualified noting, a more severe level of underclaim in the Starch reported shares becomes noticeable.

On first examination, multiple page exposure shows a good match, as well. However, the matching figures cover-up the fact, that the pages *claimed* to be opened twice or more, correspond in only in 1.5% of the cases with the pages *observed* to be opened more than once.

Conclusion: only the *share of pages opened* can be adequately reproduced by reading/noting techniques, but the Starch approach is not reliable enough to reproduce qualified noting nor multiple page exposures.

Consequently, MPX was dropped from further research stages at this time because it seemed highly unlikely that an affordable solution could be found in time. The main goal of the study remained the development of reading/noting techniques or question phrasings, which would reduce underclaims of qualified reading, as shown in Table 1, and this became stage 2.

Stage 2: Improving Reading/Noting Techniques

To find the best reading/noting method to determine qualified noting, a multi-stage approach was used, with four different techniques.

Version A: Interviewer instruction: Open each page in turn and ask for each page: Did you see or read anything from this page?

yes
no

Version B: Instruction: Open each page in turn and ask for each page:

Did you...

... read or see all of this page
... read or see part of this page
... only see the pictures and read the headlines
... read or see nothing at all from this page

Version C: Instruction: Open each page in turn and ask for each page:

Did you...

... read or see two or more articles from this page
... read or see one article from this page
... read or see no article from this page

Version D: Instruction: Open each page in turn and ask for each article on each page:

Did you read or see this article?

yes, sure
perhaps, cannot say
no, sure not

To establish the two best suited versions, we used Belsonized interviews. First we conducted an ordinary reading/noting interview followed by in-depth explorations in which we checked why the respondents had reacted the way they did in the first part of the interview, i.e. how valid are the answers, how sure were the respondents and how did they experience the phrasings.

The sample included 12 readers each of an issue of Schöner Wohnen, Brigitte, Hörzu, Neue Post and Frankfurter Rundschau. Each respondent had to answer two versions of the reading/noting techniques for a selection of pages, thus ensuring 30 respondents per test version.

Fieldwork period was September 28 - October 4, 1990 in Frankfurt and the Ruhr area.

Results

The in-depth interviews clearly showed the respondents distinguished between "a quick glance at something on a page, to be able to recognize it" and "reading or looking at something on a page". This explains the differences of "qualified noting" claims from the first attempt (Table 1), the quick glance had simply not been considered as "reading/noting" by the respondent. Therefore, these pages were not mentioned as being opened in the quantitative survey, whereas "reading or looking at" includes some personal involvement.

Versions A and B qualified best of the four test versions based on the match between reading/noting studies and explorations and the feasibility for quantitative research.

Stage 3: Further Improving

Consequently, the next step included the two winners, versions A and B (Version A slightly modified), as well as the amount read scale, also in two versions, since testing the scales was the final goal of all the research steps.

Version A: Interviewer instruction: Open each page in turn and ask for each page: Did you see or read anything from this page?

yes
no
cannot say

Version B: Instruction: Open each page in turn and ask for each page:

Did you...

... read or see all of this page
... read or see part of this pag
... only see the pictures and read the headlines
... read or see nothing at all from this page

Amount Read Scale
Version 1:

How many pages did you open altogether to read or look at something on it?

- almost no page
- only few pages
- approximately a quarter of the pages
- approximately half of the pages
- approximately three quarters of the pages
- all, nearly all pages

Amount Read Scale
Version 2:

On how many pages did you read or look at something?

- almost no page
- only few pages
- approximately a quarter of the pages
- approximately half of the pages
- approximately three quarters of the pages
- all, nearly all pages

The survey design corresponded with the design of stage 1 except for...

- including the amount read scales
- including a daily newspaper (Stuttgarter Zeitung)
- excluding the MPX approach (for reasons mentioned earlier on)

Here is the design:

		Reading/Noting Versions	
		A	B
Amount Read Scale Versions	1	100 Respondents	100 Respondents
	2	100 Respondents	100 Respondents

As shown in the design matrix, the total sample consisted of 400 respondents, 80 for each of the five publications: Neue Post, Hörzu, Schöner Wohnen and Stuttgarter Zeitung, divided into quarters (20 respondents) over the four fields of the matrix.
As was the case with the first stage, respondents were selected via contact interviews. Observation and recording took place in a test studio and the reading/noting interviews followed three days after observation in the household of the respondents and before on-sale date of the test issues.

Results

The reliability of the two "amount read" scale versions as well as the two different "reading/noting" versions was extremely satisfactory. However, what was of main interest at this stage was again the comparison of observation and noting claims, including a cross tabulation against the amount read scales.

Table 2: Observation and Noting Claims versus Scale Claims

	Observation %	Reading/Noting Claims %
Scale Version 1		
Reading/Noting Version A	60.7	48.9
Reading/Noting Version B	64.1	53.7
Scale Version 2		
Reading/Noting Version A	60.7	47.0
Reading/Noting Version B	61.1	50.6

The differences look familiar. As in stage 1, the reading/noting scores underestimate the observed page exposures. This is true for the grand total of *all* pages of a test publication, regardless of the content. A break down by content, editorial and advertising, reveals a surprising result: noting of advertisements is generally underestimated! Noting of exclusively editorial pages is generally overestimated!

We can demonstrate this effect by showing the break out of Reading/Noting Version B against Amount Read Scale 1. This combination shows the best match between observation and noting scores.

Table 3: Noting Claims by Content

	Share of pages opened	Difference from observation
	%	
Observed opening (*all pages*)	64.1	0
Claimed opening		
All pages	53.7	-10.4
Editorial pages with ad share over 50%	62.7	- 1.4
Editorial pages with maximum ad share 50%	63.7	- 0.4
Exclusively editorial pages	67.9	+ 3.8

It became evident: if we analyze all mixed ad/editorial pages with a maximum ad share of 50%, the noting claims in the reading/noting study reflect the actual observed opening of *all* pages, including full page advertisements! The analysis of mixed ad/editorial pages delivers the correct estimate for the exposure to all pages.

And it works for the individual scale steps, too:

Table 4: Noting Claims by Content and Scale Steps

	Observed opening of all pages	Claimed opening of pages with maximum 50% ad share
	%	%
Total	64.1	63.7
Amount Read Scale		
almost no/only few pages	27.2	26.4
approximately a quarter	61.8	57.6
approximately half	54.8	56.2
approximately three quarters	66.5	68.1
all, nearly all pages	76.7	76.5

The MA found a tool to estimate the actual page exposure by using the noting claims for mixed ad/editorial pages with a maximum of 50% ad share. Version 1 of the amount read scale proved to best suited in combination with version B of the reading/noting questions. The question phrasing and the differentiating prompt aids correspond best with page openings of different intensity.

Calibration

Where possible of course, calibration of any scale should be based on empirical data, in this case the noting claims. In addition, it should reflect title-specific differences. A particular step of the amount read scale can represent different magnitudes for different titles. For example, the step "approximately half of the pages" could mean 45% for publication A and perhaps 60% for publication B.

This caused a lot of problems. Literally it would mean calibration reading/noting studies for every single MA-publication, clearly impossible because of time and money constraints. Instead, the MA selected representative publications for the relevant categories. Title-specific characteristics should be used for the individual calibration, as will be shown later on.

Selection of Representative Publications

This was no easy task. At first, all magazines covered by the MA were coded according to their...

- technical data (such as advertising revenue, volume, ad share or print)
- content-analytical data
- readership profile (such as demographics)
- function criteria (according to classification of the content)

This set of data was the base for a typology, resulting in 25 different clusters, which in turn served as the base for the selection of representative publications.

This selection process had to consider a number of criteria.

(1) The distance of an individual title from the cluster centre. The nearer the title to the centre, the more typical.

(2) Almost as important as the distance is the coverage of the publication in question, due to the simple fact that the calibration noting surveys should not be based on too few readers.

(3) In addition, the selected title should represent something like a "market leadership" within the type.

Apparently the typology worked very well, as the following table can demonstrate:

Table 5: Typology Results

Publishing Interval Monthlies	Selected Titles No.	Selected Titles %	MA- Titles %
Monthlies	13	52	52
Fortnightlies	3	12	11
Weeklies	9	36	37

To this point, the religious press, town/city magazines and newspapers were not included, mainly due to timing. The typology was based on MA'91 data, and most of these titles joined in time for the MA'92. For these additional publications, the selection was done directly, by expert rating, based on a supplementary coding of the relevant criteria. We thus selected a total of 33 publications, 25 magazines, 1 religious publication, 1 town/city magazine and 6 dailies.

After all this preliminary work we were now ready to tackle the calibration surveys for the 33 representative publications. The interviewees were again selected from the broadest audience of the titles by contact interviewing. Fieldwork period was from August 21 to November 13, 1991. The interviewer had to carry the last three issues of the publication in question and had to establish first, which of these three issues the respondents had read within the last publishing interval.

If none, the interview was terminated, if more than one, the interview was done with the most recent issue. The most recent issue was chosen, because we feared that memory decay would reduce the noting scores for issues read over more than one publishing interval. And this was confirmed, as the following table will show:

Table 6: Memory Decay Effect

Amount Read Scale Steps	Share of pages opened	
	Most recent reading within publishing interval %	Most recent reading later than publishing interval %
1	63.1	53.3
2	56.1	53.6
3	59.1	52.9
4	67.0	66.4
5	77.8	75.2
6	85.8	85.3
Average	76.2	74.9

The higher the scale step, the better the match. However, for the lower steps we see severe differences between issues read recently within the publishing period and issues, where the reading was spread over a longer period of time.

Some more technical remarks: in the interview the amount read scale came first, followed by a number of questions to distract from this topic before going through the book. The noting studies for the dailies excluded pages with classified advertisements only.

In total we tested some 278 different issues and had to analyze approximately 675000 pages. The overview is very lengthy and therefore shown as Appendix A.

Results

First a recap: ascribing literal weights to the individual scale steps results in the familiar graph, as shown in Hongkong: Speetzen/Czaia: "Getting at the message". However, the underclaims for the first five scale steps are far more severe than those shown in Hongkong for the average of all pages in just a few publications. In fact, the actual page opening is miles above the scale results with literal weights. Only for the top step of the scale we notice moderate overclaims, applying the literal weights.

There are obviously a number of reasons for these severe differences. Most important is probably the fact that all scales are usually perceived as relative. The supposed absolute values are suppressed. Anyway, the differences make it evident: calibration is needed, if we aim for fair page exposure values.

The next question is: how can we transfer the results from the representative titles to the majority of publications? The obvious way would be to use the results of the representatives for all titles in the cluster. Although we tested more than one issue per test title, for time and economic reasons we limited the number of respondents per title to roughly 150. Thus, the margin of error per issue is considerable. Furthermore, the results are highly dependent on the attractiveness of the test issues and hence, the comparability was not always guaranteed.

Therefore, we rejected this approach and settled for an ascription through multiple regression analysis. For this purpose we had to pre-calibrate the amount read scale with the average noting scores per step for all 27 test magazines.

Table 7: Average Weights

Steps	Weight
1	52.7
2	58.5
3	64.4
4	75.2
5	85.0
6	91.1

How to establish empirical data for all MA publications? Again a crucial task. Earlier experiments have shown that the increasing number of questions per title has a negative influence on the reported reach levels. It appears that interviewer and/or interviewee effects push the overall reach level down by roughly 20% on average, as shown in Michael Walter's Hongkong paper: "When less is more."

To solve this problem, the MA choose a more costly method and introduced a "Parallel Sweep" in addition to the actual MA interviews. This was based on 8,970 respondents, representing the same MA-universe, the German speaking population, 14 years plus, living in private households.

The media questions followed exactly the original MA interview, however, each respondent qualifying for the broadest audience of a publication had to answer two additional questions regarding amount read and time spent reading. The results of the two extra questions were needed for the calibration.

Before tackling the calibration, we had to fuse the data of the Parallel Sweep into the actual MA. This way we achieved a comprehensive data base with original reach levels plus the quality of reading data: amount read and time spent reading. The fusion was executed by the PC-Software company Immediate of Bremen, with the help of the IF-Interactive Fusion programme, as shown in Hongkong: Czaia/Speetzen: "To fuse or not to fuse." We can skip all details here, because fusing the Parallel Sweep into the MA will be reported in another session of this symposium: Uwe Czaia: "Interactive Fusion."

Calculation of APX

At the end of the day we aim for a probability to be exposed to an average page in an average issue of a publication. The steps taken to prepare the data have been outlined. First we have to establish a page exposure factor, stating what share of all pages of an individual publication had been opened on the occasion of an average exposure to the publication. Second, we have to convert the individual amount read scale steps into page exposure factors.

Let us start with the easy process for newspapers. Here, all we have to do is to construct cells for the three groups of papers national, regional and newsstand papers and separately for men and women, and ascribe the noting survey results for each scale step directly.

Table 8: Calibration Weights for Dailies

	Amount Read Scale Steps					
	1	2	3	4	5	6
National Papers						
Men	5.0	60.5	69.2	81.5	86.3	88.4
Women	5.0	44.9	69.5	74.1	77.6	90.4
Regional Papers						
Men	5.0	50.1	71.6	70.3	84.8	87.8
Women	5.0	71.2	67.9	76.5	74.9	85.0
Newsstand Papers						
Men	5.0	86.0	80.3	89.2	92.4	95.3
Women	5.0	72.6	74.1	83.2	89.7	92.4

Now to the more complex process for magazines. As discussed earlier on, here we had to find the weights through a multiple regression analysis. After discussing the various attempts and their results, individual analyses per title or grouped analyses per cluster, the best solution seemed to be one overall formula for all publications, however, allowing for the title specific characteristics by including all criteria, even criteria not used in the noting studies, into the independent variables.

After testing and discussing 28 regression models in total, the technical committee of the MA settled for the following:

Page Exposure Factor =
0.7862 * noting score weighted amount read scale
\+ 1.6774 * time spent reading
\- 0.0167 * page volume
\+ 0.2441 * frequency of reading
\+ 0.0112 * probability of belonging to cluster 1
\- 0.0008 * probability of belonging to cluster 2
\+ 0.0119 * probability of belonging to cluster 3
\+ 0.0314 * probability of belonging to cluster 4
\- 3.3700 (level constant)

The attentive reader will have noticed that the formula includes the probability of belonging to four clusters, while we have actually found five super types, as described earlier in this paper. The reason is quite simple: the probabilities of belonging to clusters 1 - 5 add to 1.0 therefore, the formula shows us four types and considers the remainder probability (1.0 - p1 -p4) automatically.

The formula stands for 31% of the total variance of the noting surveys, in other words: 69% of free variance cannot be covered by the independent variables shown above. On first sight it seems a poor result, however, results based on unprepared individual data very rarely show better matches. In fact, compared with previous results from similar analyses, our 31% ranks top.

The best way to demonstrate the formula is probably to show a fictitious case, as Peter Beike has done in his documentation for the MA. There he shows a reader of HÖRZU, who claimed step 4 at the amount read scale prompt, which corresponds to 75.2. He claims 45 minutes time spent reading, this corresponds with the scale value 6. The page volume can be entered exactly with 143 pages. The same applies to the probabilities of belonging to one of the clusters. The frequency of reading, 8-9 issues out of 12 matches the scale value 8 on the frequency scale.

Now we can start with the formula:

Criterion	*Individual Scores*	*Regression Coefficient*	*Weighted Scale Values*	*Result*	*Cumulated Result*
Amount read	4	+0.7862	* 75.2=	+59.1	59.1
Time spent reading	45 min	+1.6774	* 6.0=	+10.1	69.2
Pagination	143 p	-0.0167	*143.0=	- 2.4	66.8
Frequency of reading	8-9	+0.2441	* 8.0=	+2.0	68.8
P for cluster 1	0.501	+0.0112	*501.0=	+5.6	74.4
P for cluster 2	0.204	-0.0008	*204.0=	-1.6	72.8
P for cluster 3	0.000	+0.0119	* 0.0=	0.0	72.8
P for cluster 4	0.147	+0.0314	*147.0=	+4.6	77.4
Level constant		-3.3700		-3.4	74.0

The table shows very clearly that the page exposure factor is mainly dependent on the two measured reading quality criteria: amount read and time spent reading. The frequency of reading is less important than the probability to belong to some of the super types.

To come back to our fictitious reader, the resulting page exposure factor is 74.0, or read as a probability score: 0.74, it means, this reader usually opens approximately three quarters of all pages of a HÖRZU copy that he handles.

The multiplication of the vehicle contact probability with the page exposure factor produces the probability of being exposed to an average page in an average issue of a publication carrying advertising, or short: the APX=Average Page Exposure!

If our reader, for example, has a probability of being exposed to an average copy of HÖRZU of, say 80%, the APX would be 0.74(APX)*0.80(AIR) = 0.59! All APX scores are individual probabilities, based on the individual combination of vehicle contact probabilities and page exposure factors per title and person.

APX - The Consequences for Media Planning

Now that we have the new currency, what will change? What are the implications for media planning? Will APX scores differentiate better between publications better than AIR scores can?

Again we can refer to Peter Beike's analyses in the MA-brochure, where he analyzes rank orders of titles and evaluates media schedules.
Let us start with the rank orders. How do the rank orders of MA publications change, when APX replaces AIR? Peter Beike analyzes reach and cost per 1000 readers based on AIR and APX for six target groups.

1 Total adult population (14 + years)
2 Men
3 Women
4 14 - 29 years
5 30 - 44 years
6 45+ years

The following chart shows per target group, how many titles increased or decreased by changing from AIR to APX.

Table 9: APX Effect on Titles

		Of all 135 magazines, those that have changed more than 5 ranks		Of all 43 Dailies, those that have changed more than 5 ranks	
		up	down	up	down
Total population	Reach %	11	7	1	0
	Cost per '000	8	11	1	1
Men	Reach %	8	14	0	1
	Cost per '000	11	15	1	0
Women	Reach %	6	4	0	0
	Cost per '000	4	3	1	0
14 - 29 years	Reach %	5	6	0	0
	Cost per '000	18	20	0	0
30 - 44 years	Reach %	10	12	2	0
	Cost per '000	16	16	1	0
45 + years	Reach %	5	2	1	2
	Cost per '000	10	13	0	0

The effect of APX seems surprisingly moderate. We cannot claim this to be a revolution in media planning terms. Newspapers are hardly affected by the new media buying currency, mainly because the readers open most of the pages anyway. With magazines we see some changes, on average roughly 15%. The fewest changes can be seen in the target group "women", whereas the younger targets, 14 - 29 years, reveal the largest differences, both for reach and for cost per '000.

What this summarized chart cannot reveal is, *which* titles changed positions. If we take a detailed look just at the reach rank orders, it is revealed that only the smaller publications with low AIRs are affected. If we look at the cost per '000 changes, some of the larger publications can be affected as well. Publications improving their position are usually special interest titles, meeting the needs of their targets. This makes sense. The more a publication satisfies the readers' needs, the more pages can we expect to be opened. Bearing this in mind, the benefits of APX can be seen in differentiating smaller special interest titles.

For schedule evaluation, Peter Beike analyzed altogether 18 different schedules, 6 each for three target groups. The schedules differed in budget size and number and type of publications. In fact, his choice can demonstrate the different effects of switching from AIR to APX extremely well. We, therefore, copy his complete table first and then zoom in the detailed information for conclusions.

The evaluation criteria were net and gross reach for both AIR and APX. Here we should skip the listing of titles with their number of insertions, however, it should be mentioned that we compare media plans with just a few large titles and a high frequency of insertions against plans with a large number of large and small titles with a low frequency of insertions. The details can be looked up in the German brochure. We should rather move on to the results, which are in total shown in Appendix B. Here we will extract the key figures.

The first result is obvious and not surprising: the **increase in net reach** by changing from schedules with a few large titles to a plan with a large number of generally smaller titles. This is true for both, AIR and APX. We can see this clearly by zooming in the first lines of Appendix B.

Table 10: Schedule Evaluation

		Schedules with few large titles			Schedules with many large and small titles		
Budget in DM million		**1**	**2**	**4**	**1**	**2**	**4**
Total adult population							
Net reach	AIR	59.8	63.5	66.8	73.2	79.5	83.1
	APX	56.5	61.7	65.6	67.4	76.7	81.5
	Index	***94.5***	***97.2***	***98.2***	***92.1***	***96.5***	***98.1***

Looking at the index (APX/AIR*100) it becomes also evident that with increasing insertions, i.e. larger budgets, the APX level is getting closer and closer to the AIR level. In our example, the index is increasing from 92 resp. 94 to 98, thus average page exposure probability is only 2 points away from the average issue exposure probability.

This picture changes if we look at the gross reach results by zooming in the second block of table. Here we can demonstrate the APX effect on media schedules, a clear reduction in comparison to the AIR results. For the global target group, total adult population, the reduction is around 20 percent, independent from budget size and selected titles. That shows, that all titles included had more or less similar APX/AIR ratios.

Table 11: Schedule Evaluation

		Schedules with few large titles			Schedules with many large and small titles		
Budget in DM million		**1**	**2**	**4**	**1**	**2**	**4**
Total adult population							
Net reach	AIR	220.9	447.2	989.0	181.5	381.9	775.6
	APX	181.2	358.7	801.8	145.3	306.9	619.8
	Index	***82.0***	***80.0***	***81.1***	***80.1***	***80.4***	***79.9***

Moving away from global targets, the picture changes again and the value of APX becomes clearer.

Table 12: Schedule Evaluation

		Schedules with few large titles			Schedules with many large and small titles		
Budget in DM million		**1**	**2**	**4**	**1**	**2**	**4**
20 - 49 years and monthly net income DM 2500 and more							
Gross reach	AIR	303.7	607.3	1272.9	218.9	437.8	963.7
	APX	253.1	506.3	1059.1	168.8	337.5	747.8
	Index	***83.3***	***83.4***	***83.2***	***77.1***	***77.1***	***77.6***
Women 14 - 39 years							
Gross reach	AIR	204.1	476.1	952.3	179.4	362.8	808.9
	APX	157.2	366.8	733.5	142.6	287.3	644.7
	Index	***77.0***	***77.0***	***77.0***	***79.5***	***79.2***	***79.7***

Obviously, the inclusion of more and smaller titles had a significant effect for the different target groups. For the first target group, 20 - 49 years plus monthly net income of DM 2500 or more, the added titles had a negative effect, the APX/AIR ratio of the added titles was worse than the resp. ratio of the larger titles. In the case of women 14 - 39 years , the inclusion of the smaller titles proved to be positive.

The same titles which showed a low average page exposure probability for the first target group, delivered a much better average page exposure probability for the second, because the APX is based on incividual probabilities, person for person and title by title. Obviously, the APX model is working the desired way. It makes media planning more versatile, with more precise results. The more intensive the selection of the appropriate titles, the better the APX effect and the better the chances of the campaign being noticed by the target group.

Appendix A: Test Titles

Title	Cases	Pagination		Issues
		Minimum	Maximum	
ADAC Motorwelt	164	76	120	4
Extra Rätsel	160	52	52	4
Neue Post	159	64	72	7
Tina	154	88	104	7
TV Hören + Sehen	157	112	132	6
Playboy	161	138	146	4
Bravo	144	64	80	6
Das Beste	148	200	366	4
Bunte	153	132	156	6
Freundin	166	218	308	5
Mein schöner Garten	142	102	130	5
Burda Moden	151	156	188	4
Medizin heute	155	68	84	4
Capital	159	204	378	4
Eltern	155	176	268	4
Essen & Trinken	157	118	166	4
Geo	156	166	232	4
P.M. Magazin	156	100	148	4
Tempo	146	152	188	4
Cosmopolitan	152	178	320	4
Prisma	158	48	64	13
Der Spiegel	161	292	356	7
Sport BILD	160	60	72	6
Auto Motor Sport	149	236	324	5
Die Zeit	152	92	106	6
Kirche + Leben	146	20	20	7
Prinz	154	132	236	9
FAZ	145	52	78	6
Süddeutsche Zeitung	142	44	78	29
Stuttgarter Zeitung	159	28	84	6
Neue Osnabrücker Zeitung	158	22	70	24
BILD-Zeitung	164	8	24	57
Express	155	18	48	38

Appendix B: Schedule Evaluation

		Schedules with few large titles			Schedules with many large + small titles		
Budget in DM million		**1**	**2**	**4**	**1**	**2**	**4**
Total adult population							
Net reach	AIR	59.8	63.5	66.8	73.2	79.5	83.1
	APX	56.5	61.7	65.6	67.4	76.7	81.5
	Index	***94.5***	***97.2***	***98.2***	***92.1***	***96.5***	***98.1***
Gross reach	AIR	220.9	447.2	989.0	181.5	381.9	775.6
	APX	181.2	358.7	801.8	145.3	306.9	619.8
	Index	***82.0***	***80.2***	***81.1***	***80.1***	***80.4***	***79.9***
20 - 49 years; monthly net income DM 2500 +							
Net reach	AIR	62.2	65.0	67.1	74.2	79.8	84.5
	APX	59.6	63.5	66.0	69.2	77.1	82.9
	Index	***95.8***	***97.7***	***98.4***	***93.3***	***96.6***	***98.1***
Gross reach	AIR	303.7	607.3	1272.9	218.9	437.8	963.7
	APX	253.1	506.3	1059.1	168.8	337.5	747.8
	Index	***83.3***	***83.4***	***83.2***	***77.1***	***77.1***	***77.6***
Women, 14 - 39 years							
Net reach	AIR	53.6	61.1	63.9	72.0	79.3	84.4
	APX	49.6	58.7	62.8	65.7	75.9	82.6
	Index	***92.5***	***96.1***	***98.3***	***91.3***	***95.7***	***97.9***
Gross reach	AIR	204.1	476.1	952.3	179.4	362.8	808.9
	APX	157.2	366.8	733.5	142.6	287.3	644.7
	Index	***77.0***	***77.0***	***77.0***	***79.5***	***79.2***	***79.7***