EXPERIENCE WITH AD HOC PANELS TO MEASURE ADVERTISING EFFECTIVENESS

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History

Gruner + Jahr has already had two ad hoc panels for measuring advertising effectiveness. The first was in 1999/2000 for fast-moving consumer goods. At that time, Gruner + Jahr mainly collaborated with Unilever Deutschland. 1,000 women were interviewed three times at intervals of 3 months. [1] The results were published in four case studies in May 2001:

- the launch of the Langnese ice-cream Cremissimo as "best case", as it were.
- brand support and consolidation of the premium ice-cream brand Magnum with a print and TV media mix for the campaign.
- the thoroughgoing introduction of a new, particularly healthy deep-freeze product
- the diversification and broadening of the cosmetics brand Dove to the point of a powerful umbrella brand.

In the various cases, the print medium, i.e. consumer magazines, also turned out to be a basic medium in different functions. When Cremissimo was introduced, a print/mono campaign laid the foundations, followed by exposure on TV to develop and emotionalise the brand. In this context, print conveyed primarily product-oriented messages and contributed greatly to enhancing brand liking and willingness to purchase (Figure 1 and 2). Following this, TV focussed on awareness of advertising and brand. In addition to this, print had the task of reaching a specific, particularly consumption-oriented, target group. The campaign met all the essential advertising targets and the result was that Cremissimo became the segment leader. A summary of the Cremissimo case is given in the "Take a fresh Look at Print" collection [2].

The Dove case is described once more in detail in a series issued by the German Publishers' Association. [3]

In addition to the case studies, we carried out aggregated analyses and modelling together with ISBA. One result was the "invention" of a two-dimensional advertising effectiveness chart ("effectiveness mountain" or "sail"), representing the effectiveness in the form of a model for each contact combination of print and TV. The effectiveness pyramid illustrates the multiplying effects in a representative study and makes it possible to arrive at particularly efficient or effective number of OTS (opportunities to see) when the basic media, print and TV, are combined. Among other things, effectiveness thresholds could be verified. The brand-strengthening function of print and the awareness effectiveness of TV, which is at times very strong and quick. But we also found that, if the campaign is accompanied by research mainly based on the advertising awareness indicator, this is a disadvantage for print. Often, the awareness effect resulting from watching TV is a consequence of the planning practice of accumulating a large number of contacts in a short period of time or simply a problem of measuring since, in the case of print, placing the advertisement and contacts do not take place simultaneously, as is the case with electronic media. We were able to confirm conclusively the superiority of media mix campaigns – assuming sufficient advertising appears at all – over purely mono campaigns. In very large TV campaigns, consumer magazines (as a supplementary medium) develop an enormous amount of additional effectiveness. Often we also discovered that, during such TV campaigns, many recipients had an unnecessarily large number of OTS on TV. This is due to the fact that people who watch TV frequently are reached more or less unintentionally, even if the intention is only to expose selective viewers to an adequate level of advertising pressure. In such cases, print can offset this wonderfully and, at the same time, introduce some target group quality to the plan.

What is fascinating about panel research is that we can really come very close to obtaining evidence of the reasons for advertising effectiveness. The people in the defined contact classes do not change in the periods between the individual interview waves as regards their demographic structure or their general attitudes. Therefore, the changes in attitudes or behaviour within the contact classes can very likely be attributed to exposure to advertising.

[1] Michael Hallemann, Das Gruner + Jahr Werbewirkungspanel. Ein neuer Ansatz zur Untersuchung der Wirkung von Print im Mediamix. Hamburg, Gruner + Jahr AG & Co KG, 2001.

[2] Take a fresh Look at Print (TAFLAP 2), FIPP 2002

[3] Erfolgkonzept Media-Mix. Fallstudie: Dove. VDZ 2003

The car advertising effectiveness panel

The experience gained from the first advertising effectiveness panel was incorporated into a second that was set up in 2002 and 2003. [4] We interviewed 1,600 potential car buyers (new car) on three occasions at intervals of four to six months. (Figure 3 and 4) The study was carried out in collaboration with IP Deutschland, the TV marketing agency for the RTL Group and as advertisers with FORD, and the agency MindShare. Approximately a third of the people interviewed actually bought a new car during the study. This gave us the opportunity to examine the impact of advertising on the decision-making process.

We found a strong influence of the brand liking on the buying decision. 80% of the people who bought a car expressed a liking for a brand prior to purchasing. The bond is just as strong as the influence of brand familiarity from having driven this make of car before (83%). The decision-making process showed signs of amazing openness in the panel analysis. A third of the potential buyers, who had originally decided in favour of a certain make, became hesitant again. (Figure 5) 24% decided to buy a different make than they originally planned. 36% of those who had taken several makes into consideration, decided in favour of a completely different make, which they originally had not included in the relevant set. (Figure 6)

This means there is a lot of scope for influencing the final buying decision by advertising. Advertising induces on the one hand an impetus to buy and on the other hand a predisposition by creating positive images of the brand. Both flow into the buying decision and for both we found the necessity to have a large number of opportunities to see the advertising in the modelling. 40 contacts in the course of the year are recommended to consolidate brand liking. 15 to 20 contacts with advertisements for the relevant model are recommended as an impetus during the extremely important final phase of the decision-making process. (Figure 7) In principal, contacts in print and on TV turned out to be of the same value although we often found strong mix effects, which mean that the use of both media is advisable. The higher the model class and the socio-economic status of the target group are, the more important the level of affinity to the advertising medium is – therefore, as a rule, print.

For this report, we have made additional evaluations in order to clarify further the significance of the time factor and the so-called recency planning in the car market as well as the predisposition resulting from the positive emotional association with the brands. What about the schedule?

Modelling the time component

The fact that the car market is almost completely covered by the information gathered in the panel offers the possibility to obtain general knowledge regarding advertising effectiveness beyond the observation of individual brands, models and the associated campaigns. For this analysis, the overall concrete model is abstracted by means of evaluating all models simultaneously.

The database for this evaluation is formed by means of creating a data set for every person interviewed and for every car model. Technically, this means that each person interviewed provides 152 observations if 152 models are included in the evaluation. There were in the panel though measurements from 1,622 people for all the waves, in other words 152 x 1,622 = 246,544 data records are available for the evaluation.

The assumption from conventional statistics that all observations are stochastically independent on each other, can no longer be sustained. This becomes evident when you look at the 'purchase' characteristic. If a person in an interview wave has decided to purchase a certain model, this almost certainly rules out the purchase of a different model for financial reasons alone.

Failure to observe independence has an effect on the statistical quality of the statements, which can be deduced from the described data set. Confidence intervals become broader and, if for example regression models are considered, variables can hardly be included in or excluded from the model any more on account of statistical reference values.

For these reasons, we have kept to the principle that all models used to explain relationships should contain as few variables as possible and conventional reference values, such as the explained variance, should only flow into the assessment of the results very carefully as a quality measure.

Therefore, it was not the goal of modelling to construct an all-embracing impact model, but rather to discover references to deep-rooted relationships. Statistically based 'proof' can hardly be presented with the approach chosen here.

Measuring takes place at three points in the data set described: t_0, t_1, t_2. The following variables are included in the observation:

- *Pc*: Purchase of a model at the point t_2 yes/no
- Ct_1: Opportunity to see adverting in magazines + on TV at point t_1, based on the advertising schedules for the period t_0 to t_1
- Ct_2: Opportunity to see adverting in magazines + on TV at point t_2, based on the advertising schedules for the period t_1 to t_2

[4] Das PKW Werbewirkungspanel. Informationsverhalten und Entscheidungsprozess vor PKW-Käufen. Werbewirkung und PKW-Kauf. Gruner + Jahr AG & Co, Fachbereich Anzeigen. Hamburg Oktobe

The contacts are formed individually for a person as the sum of the probabilities to use the media units, which are in the advertising schedule of the model in the period under review. The contacts do not describe the probability with which a recipient will be reached by a fixed number of contacts, but how many contacts on average can be expected in the case of a recipient exhibiting the media usage calculated in the measurement. Statistically speaking, this number of contacts does correspond to the expected value for the exposure distribution regarded at a recipient level.
The contacts are represented as a metrically scaled variable with values in real numbers. The value 0 means that the recipient has no contact with the media unit in the advertising schedule. For the analysis, the number of contacts is classified by rounding and becomes a characteristic with instances of whole numbers. We refer to the individual instances or summaries of this as contact classes.

The analysis is intended to clarify in the first step what influence the time factor has on the effectiveness of the media exposure that the recipient was subjected to, and on the purchase decision. The analysis will be performed with the aid of a non-linear regression.

The variable (to be declared) is not the information whether the people interviewed bought the abstracted model or not, but the estimation how probable a purchase is. To see how this estimation was formed, first of all, look at the combination of all contact classes Ct_1 x Ct_2: In each of these combinations, it is possible to calculate the percentage of buyers. This value represents by conventional means the estimation of the likelihood of purchase if in the Ct_1 x Ct_2 combination. In technical terms, this value is as follows:

$$p_{ij} = \frac{\sum_{Ct_1 = i \wedge Ct_2 = j} 1_{\{Pc\}}}{\sum_{Ct_1 = i \wedge Ct_2 = j} 1_{\{\}}}$$

with $1_{\{\}}$ as an indicator function. This definition of p_{ij} can be seen as the segmentation of the external purchase criterion into the segments created by the combinations of the contact classes.

The regression model now attempts to explain this purchase probability by means of the contacts Ct_1 and Ct_2:

$$p_{ij} \sim f(Ct_1, Ct_2)$$

The function *f* is defined as

$$f(Ct_1, Ct_2) = m_1 \cdot \left(1 - e^{-(k_1 Ct_1 + k_2 Ct_2)}\right) + m_2 \cdot \left(1 - e^{-l_1 Ct_1}\right) + m_3 \cdot \left(1 - e^{-l_2 Ct_2}\right) + r$$

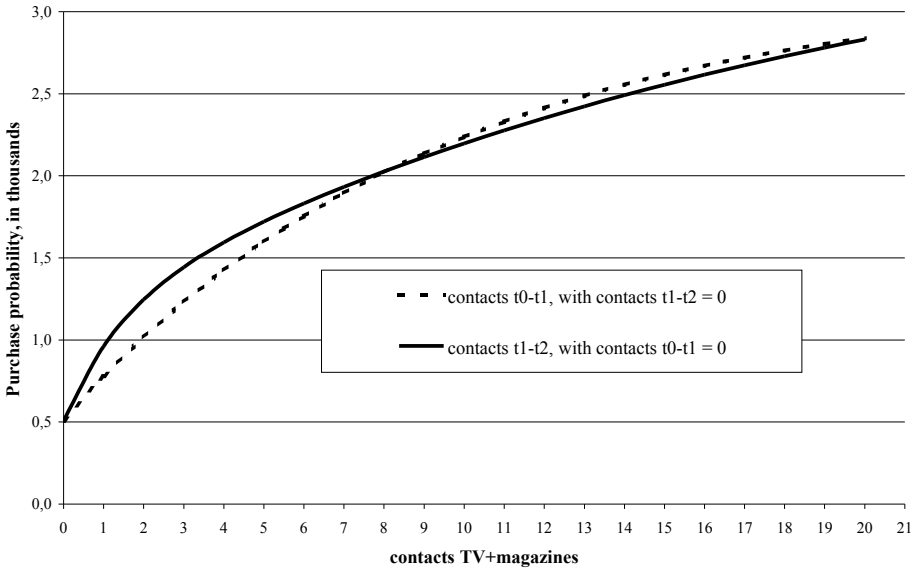
provided all the parameters to be estimated in the regression are greater than 0. The *f* function basically merely represents a linear combination of saturation functions. The numerous parameters to be estimated in the regression give the model flexibility so that subtle effects can be reproduced.

Performing the regression provided the following values:

Parameter	value
m_1	2.646
m_2	0.008
m_3	0.642
k_1	0.105
k_2	0.051
l_1	2.546
l_2	0.701
r	0.507

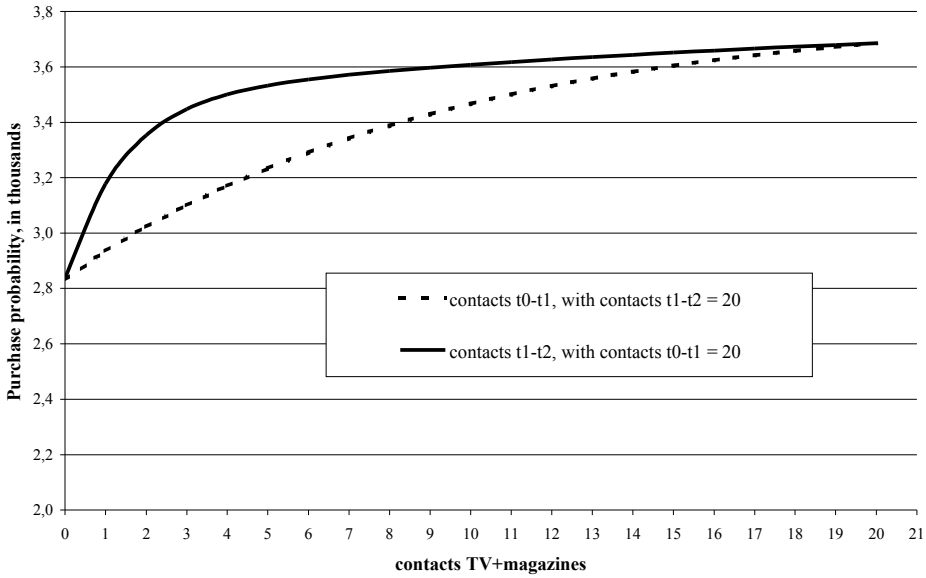
It is not intuitively clear at this point in what way these parameters connect the number of contacts with the purchase probability.

Therefore, let us look at some special cases. First of all, the case that one contact class does not occur each time:



The graph shows that Ct_2 influences the buying decision more effectively than Ct_1 at a low number of contacts. This is not surprising since the Ct_2 contacts are closer to purchasing than Ct_1. When the number of contacts increases, both variables appear to be equally effective.

Now look at the case that the number of contacts is fixed at 20:



The absolute level is much higher than in the previous graph. However, it can be seen that the contacts closer to the time of purchasing are more effective than those further back in time when the number of contacts was low.

It is amazing that the chronological difference evidently has no effect on the purchase when the number of contacts is higher. Actually, one might assume that the effect of contacts further back in time would diminish and these would therefore be less effective.

An explanation for this phenomenon might be found if additional variables are taken into consideration. (Figure 8 and 9) The following table illustrates the influence of brand liking on the purchase probability:

total

purchase probability t_2 in ‰		contacts $t_0 \rightarrow t_1$	
		0	1+
contacts $t_1 \rightarrow t_2$	0	0.503	0.708
	1+	0.767	1.873

liking t_1

purchase probability t_2 in ‰		contacts $t_0 \rightarrow t_1$	
		0	1+
contacts $t_1 \rightarrow t_2$	0	1.493	2.060
	1+	1.955	4.582

without liking t_1

purchase probability t_2 in ‰		contacts $t_0 \rightarrow t_1$	
		0	1+
contacts $t_1 \rightarrow t_2$	0	0.135	0.039
	1+	0.189	0.584

The effect is clear - recipients with brand liking are much more ready to purchase a model of that brand. Obviously, contacts t_0-t_1 contribute to changes in the people interviewed during preparations for purchase even if they do not lead directly to a purchase. This shift in the level is reflected in the parity that the contacts have in the diagrams above.

Conclusion

When viewed, the analysis according to time reveals that the influence of the time factor is much lower than originally thought.

We have compared two periods each of approximately 5 months. The effectiveness of old and new contacts as such is approximately the same. However, the new contacts are much more effective if they can build on a plateau of old contacts. (Figure 10) If a person has ten contacts in the time prior to the period leading to the purchase, for example, he reaches a purchase probability of 2 per thousand. 14 additional contacts would be necessary in the time prior to this period to increase this figure to 3 per thousand. The same effect could be brought about by 4 fresh contacts in the period leading to the purchase. This means the "fresh" contacts are in this case more than three times more effective than the "old" ones. If they cost the same, they are also more than three times more efficient. Unfortunately, you can only take advantage of this effect if you know when the person intends to buy. Therefore, there are several reasons for dispersing the OTS over the complete periods of a sales campaign. 15 to 20 contacts for every six months seem to be optimal as far as the promotional effect is concerned.

This appearance is strengthened if you take image building into consideration, measured by brand liking for the umbrella brand. Here, there is no relationship between contact period and effectiveness. The contacts accumulate, as it were, in the periods under review. However, there is an additional multiplier effect when a person is reached in both periods. Brand liking, in turn, is an extraordinarily powerful characteristic preceding the purchase. Even if there are contacts in both periods under review, purchase probability is eight times greater if brand liking already exists. Without contacts and without brand liking, the purchase probability is almost zero. However, to keep brand liking at a good initial level, you need at least 40 contacts a year according to the panel data.

Therefore, we recommend the following pattern for car advertising to promote sales: Sustained investment in the brand by means of image-building advertising and model-related promotional advertising in the introductory periods with 15 to 20 contacts every six months. (Figure 11) With these measures, sales of cars can be quadrupled simply by means of conventional advertising in print and on TV. The use of individual media should be underpinned by a balanced media mix and by the necessary contact and target group quality.

Outlook

The positive experience gained by the panel method has led to an ad effectiveness panel being set up on a long-term basis at Gruner + Jahr. For reasons of economy, interviews take place online: four times a year, among 2,000 people selected representatively with Internet access. At present the sixth wave is in process. This means that we will - together with our advertising clients - be able to gain further experience, case studies and general knowledge which satisfy the individuality of the advertising effectiveness process.

Figure 1

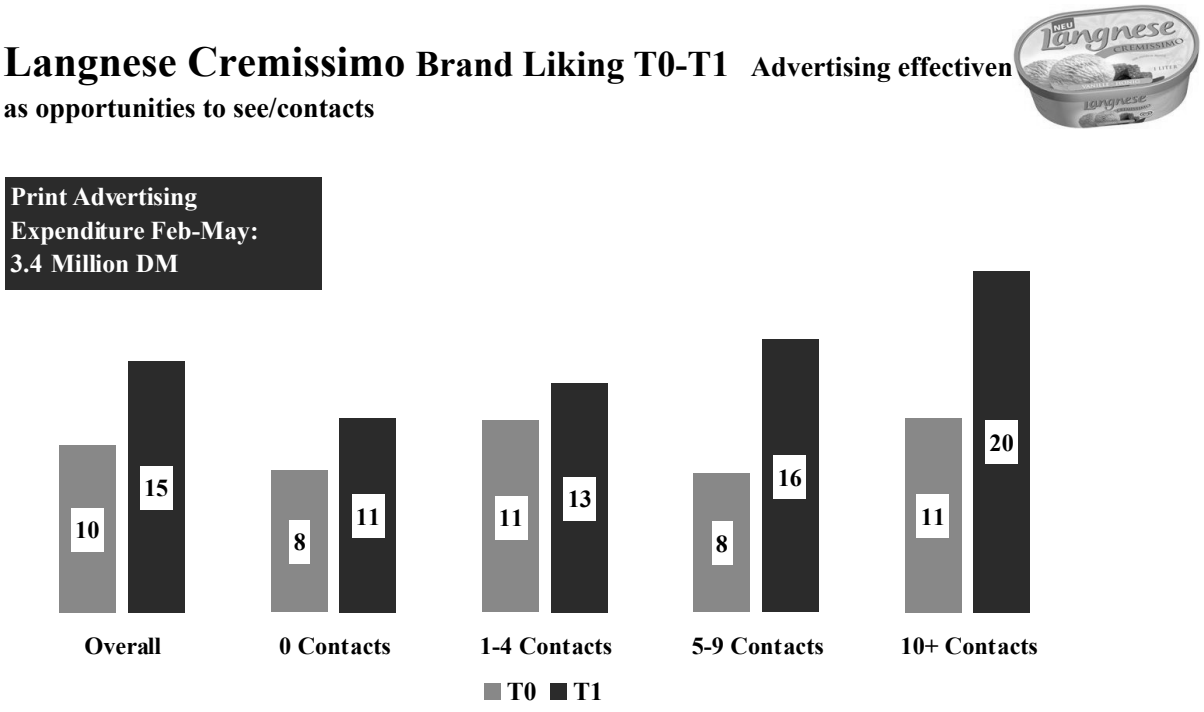


Figure 2

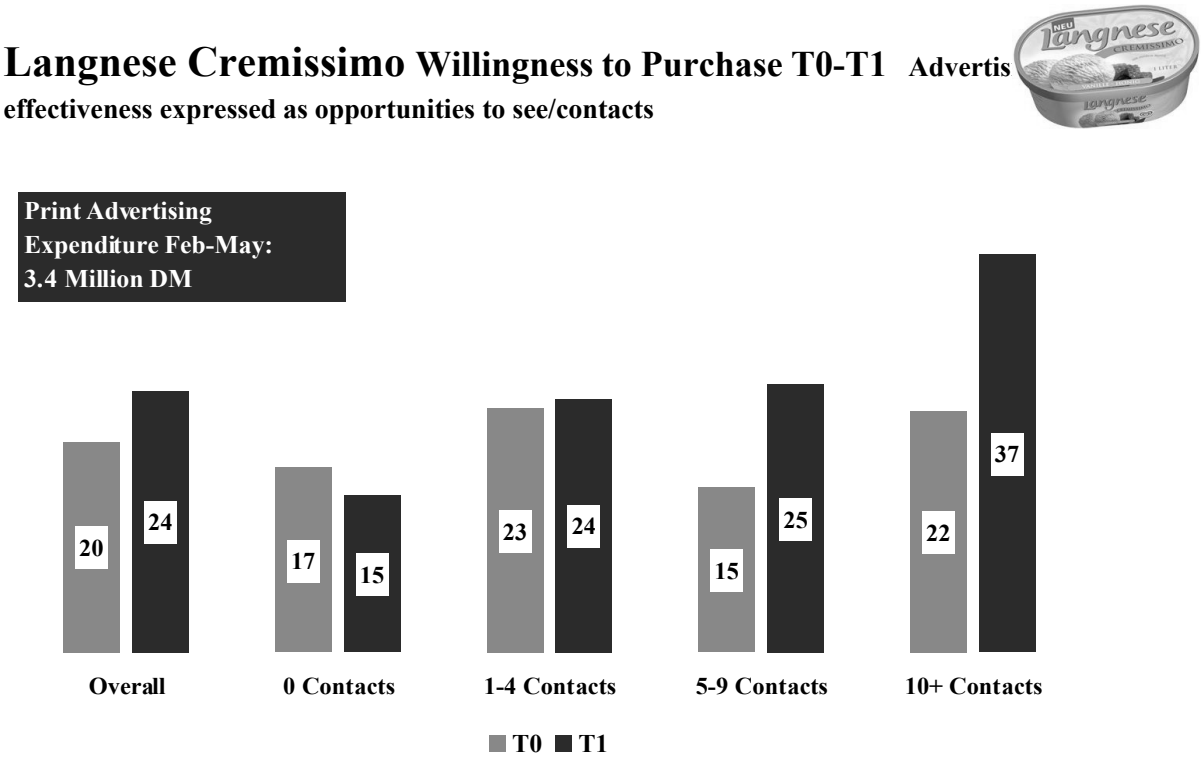


Figure 3

Decision-Making Process and Ad Effectiveness Prior to Car Purchase - Survey model

Universe	**Plan to buy a car (new car during the next two years), aged 18-69 = 3.03 million**
Selection process	**Quota (based on the AWA2002)**
Methodology	**3 person-identical interview waves, face-to-face-interviews**
Respondents	**1st wave: 2.215 interviews 2nd wave: 1.859 interviews 3rd wave: 1.622 interviews**
Fieldwork	**April 2002, August/September 2002, February/March 2003**
Institute	**Institut f Demoskopie Allensbach**
Data preparation	**ISBA, Hamburg (p-scores, probabilities of exposure to advertising, multivariate evaluation)**
In collaboration with	**IP Deutschland GmbH**
With kind support from	**Ford-Werke AG MindShare GmbH & Co KG**

Figure 4

Questions about the media and media usage probability

Print
84 consumer magazines*
2 weekly newspapers*
6 pan-regional daily newspapers*
7 boulevard newspapers*
Regional subscription newspapers (category)

TV
12 stations in 26 time segments with per day*

Poster
City-Light
Billboard

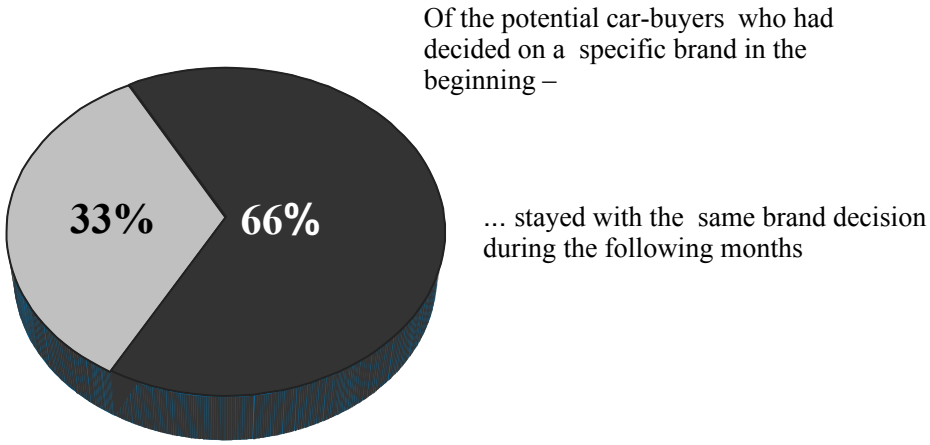
Internet per day/week/month
Manufacturer page used (brand)
Configurator
Cinema per week

Other
Sources of information used car purchase (19 items)

*) p-values calculated for media-usage and combined with Nielsen data for 152 car model campaigns

Figure 5

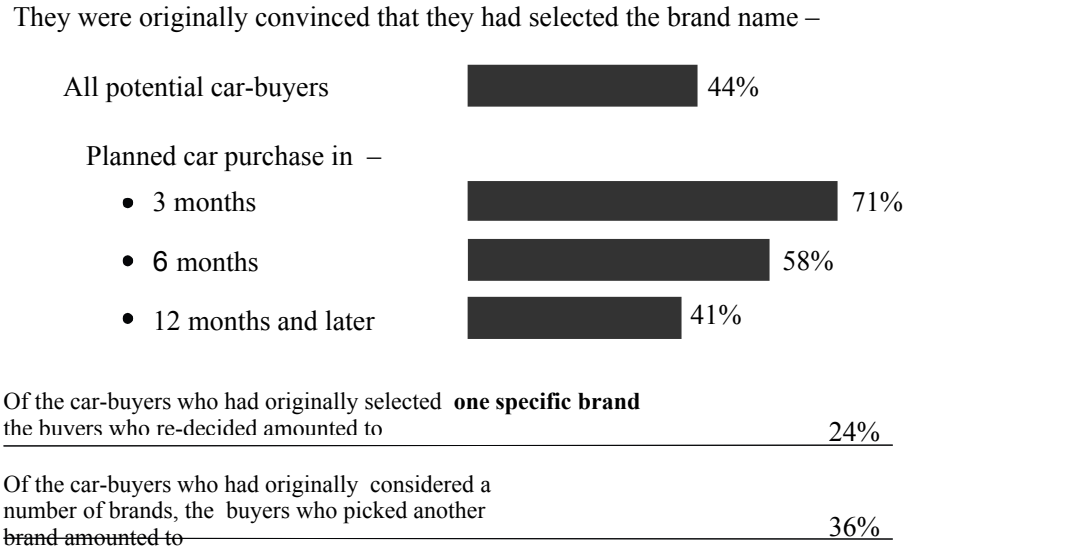
One third of those who had originally decided on a specific brand reconsidered their decision during the coming months



Universe: Potential car-buyers who have not purchased a car during the last 10 months
Source: Allensbacher Archiv, IfD-survey 1319/I-III

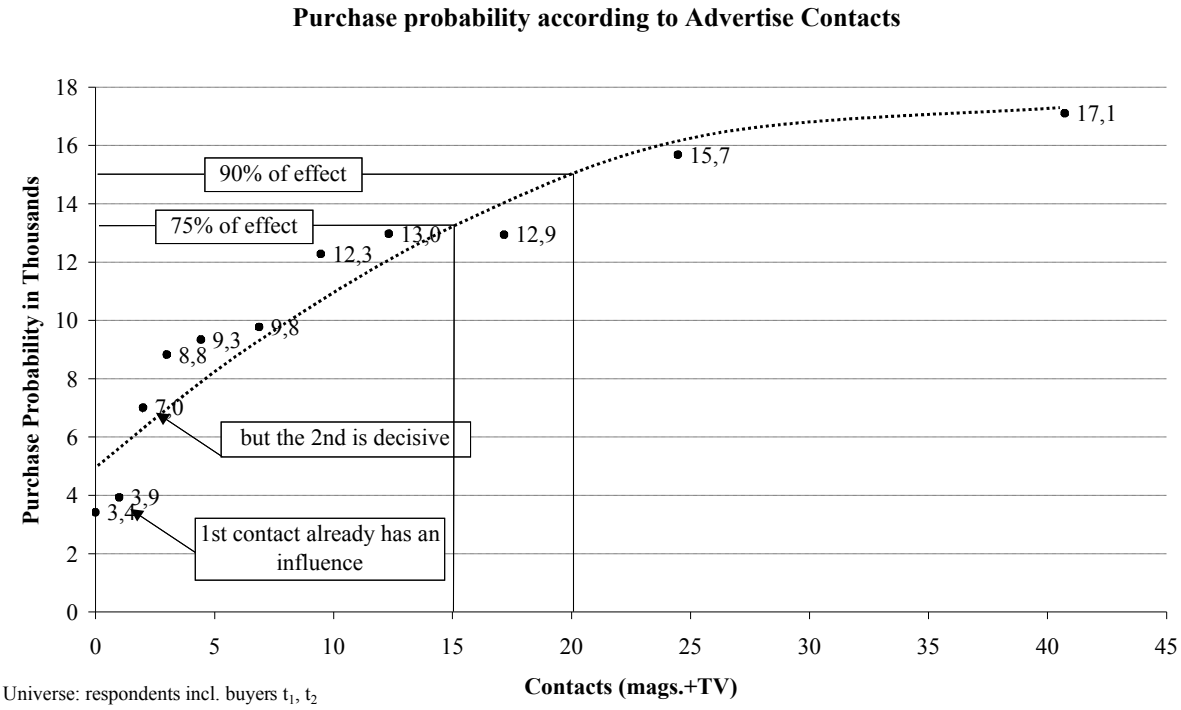
Figure 6

How firm is the brand decision among car-buyers who had originally decided on *one* brand?



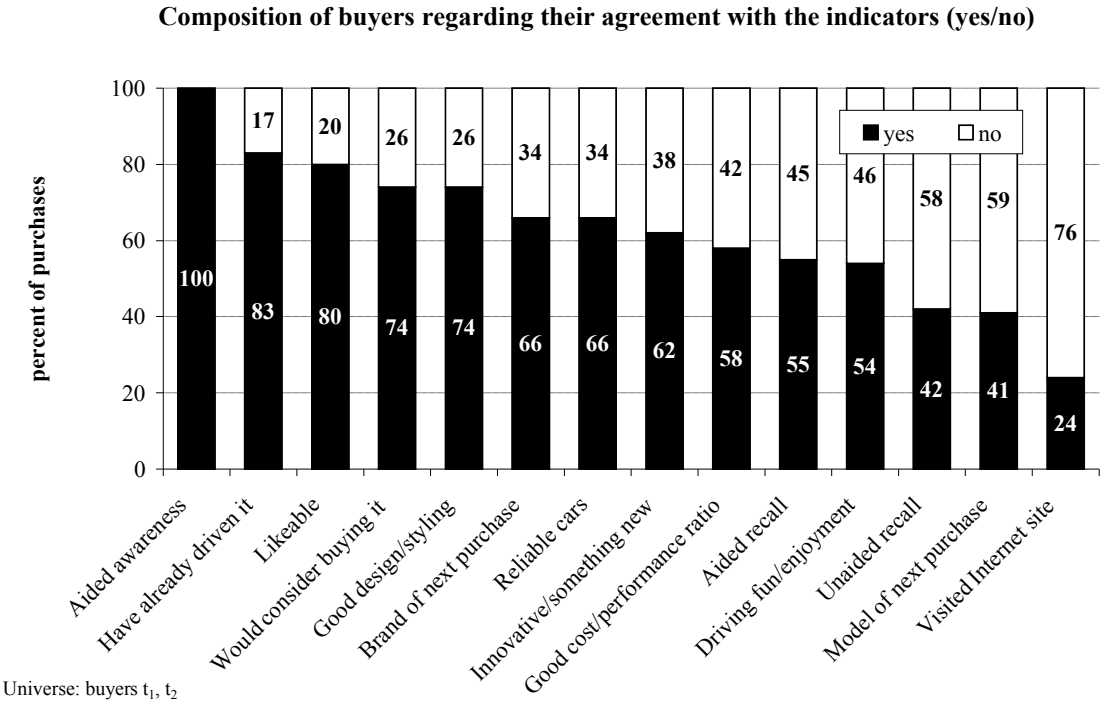
Universe: Bundesrepublik Deutschland; (potential) car-buyers
Source: Allensbacher Archiv, IfD-survey 1319/I-III

Figure 7



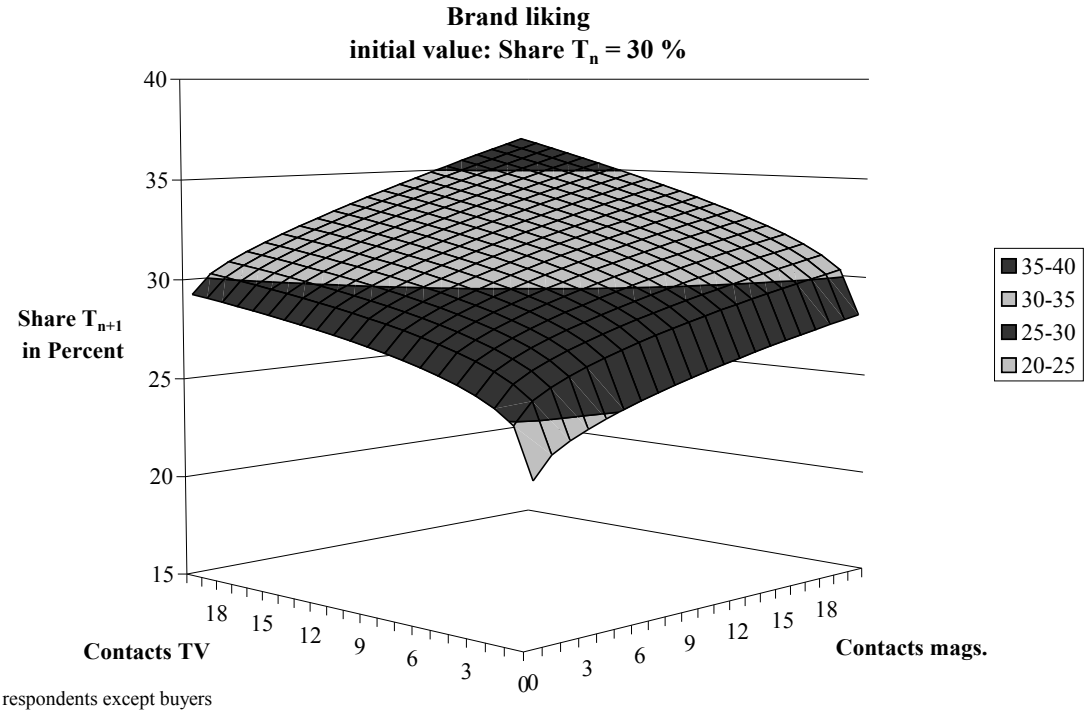
Universe: respondents incl. buyers t_1, t_2

Figure 8



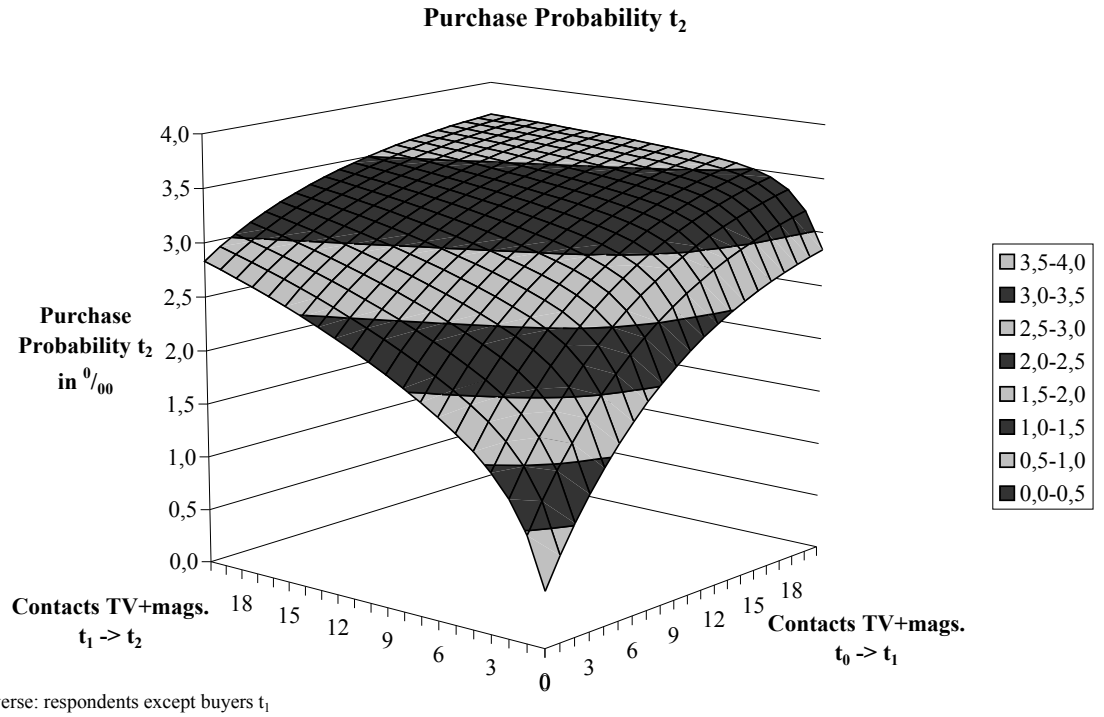
Universe: buyers t_1, t_2

Figure 9



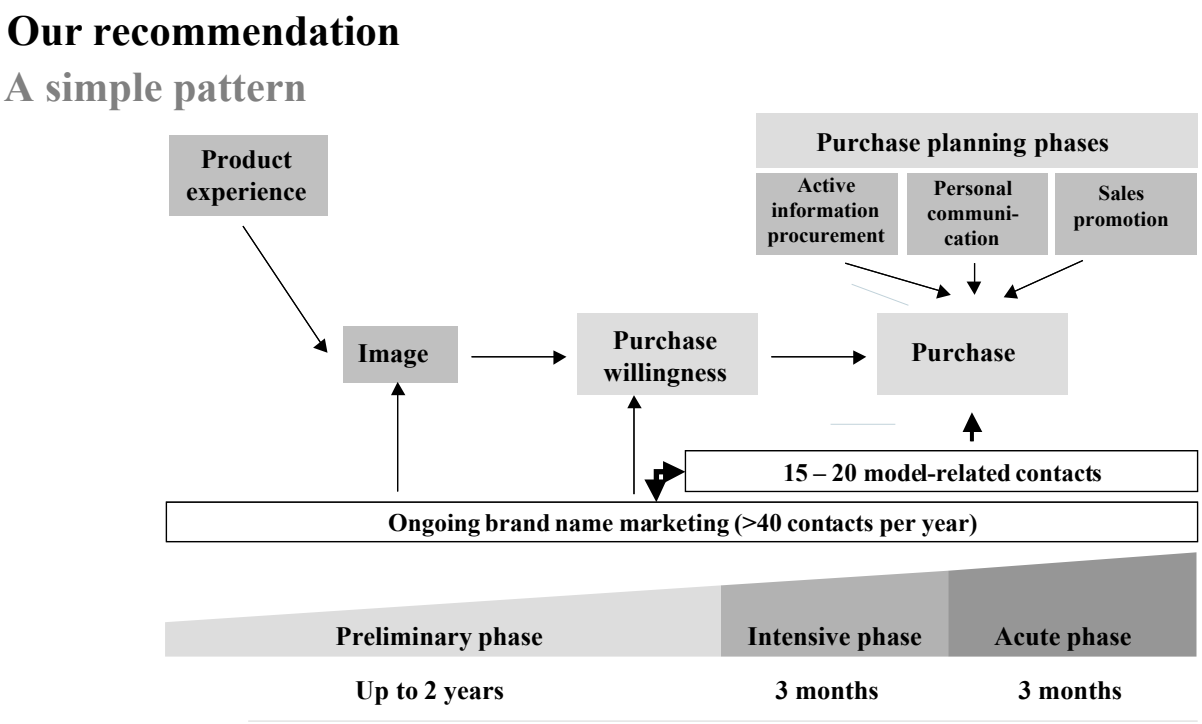
Universe: respondents except buyers

Figure 10



Universe: respondents except buyers t_1

Figure 11


Our recommendation
A simple pattern
Product experience
Purchase planning phases
Active information procurement
Personal communi-cation
Sales promotion
Image
Purchase willingness
Purchase
15 – 20 model-related contacts
Ongoing brand name marketing (>40 contacts per year)
Preliminary phase
Intensive phase
Acute phase
Up to 2 years
3 months
3 months