MANAGEMENT OF SALES DRIVING COST BY MINIMISING UNPRODUCTIVE COMPONENT OF THE COST

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Abstract

It is not enough to analyse an investment or spending amount alone in order to understand how costs or expenses drive revenue. More elements such as timing of spending, segments of customers to whose investments are targeted, possibility to attract customers' attention and how effectively money were or are planned to spend should be analysed.

Objective of the article is to explain nature of Unproductive Sales driving cost; identify factors impacting size of unproductive cost; explain relationship of return on investment and unproductive cost; show techniques how to increase sales with no additional investment through increase of productive component of the cost by reducing unproductive component.

Analyses of cost behaviour, identification of factors and drivers impacting size of cost, analyses of practical techniques to maximise sales and return on investment are the methods presented in this article. Regression analyses are the econometrical method recommended to use when analysing customer behaviour impact on sales driving costs and sales.

Conclusion – business should understand nature of sales driving cost, identify unproductive component of it, track it and use it to support decisions. Gradual reduction of unproductive component can drive continuous sales increase without negative impact on profit margins.

Keywords: variable cost, sales driven and sales driving costs, cost behaviour, sales driving programs.
JEL Classification: G39, M49.

Introduction

Most management researches and business people know the phrase of John Wanamaker "I know that half of my advertising dollars are wasted … I just don't know which half." It is applicable to all Sales driving cost – part of money spent is un-productive, it has no impact on customer behaviour and has no impact on sales. Un-productive sales driving expenses are inevitable however there is possible to minimise it and optimise productive part of sales driving expenses.

Besides John Wanamaker the problem of un-productive dollars spent was analyzed from different angles and solutions were proposed by other researches. Robert Kaplan (1997) in many of his researches analysed and proposed principles how to integrate cost and performance management systems. V. Kumar & B. Rajan (2009) proposed techniques how to profitably spent money when managing customer loyalty and avoid situation when company "buy sales from loyal customers". A. Jenkinson (1995) proposes methods and models to value customers and analyse their behaviour in order to maximise sales. Of course, list of researches is not limited by the authors listed by me above.

This article presents how to identify and minimise unproductive component of cost, explains nature of sales driving cost and proposes techniques to increase sales while decreasing unproductive component of sales driving cost.

Definition and nature of un-productive sales driving cost

Big part of variable costs can be attributed to Sales driving or Sales driven costs. Jagelavičius & Boguslauskas (2011) defined these costs - **Sales driven** costs are costs which increase with sales increase and cost driver for these costs directly or indirectly are sales. Examples of sales driven costs can be bad debt expenses (more we sell, more unpaid amounts stay), commissions paid as a percentage to sales. **Sales driving costs** are cause and sales driver for sales, more spending – more sales we can expect. E.g. growth of advertising expenses or investment in merchandising offers should lead to sales increase. Sales driving cost should be an input when analysing sales growth and sales growth decisions. As presented in figure 1, sales and sales driving cost does not have linear relationship due to the well known law of diminishing returns. The law states "that we will get less and less extra output when we add additional doses of an input while holding other inputs fixed."(Samuelson, 2001).
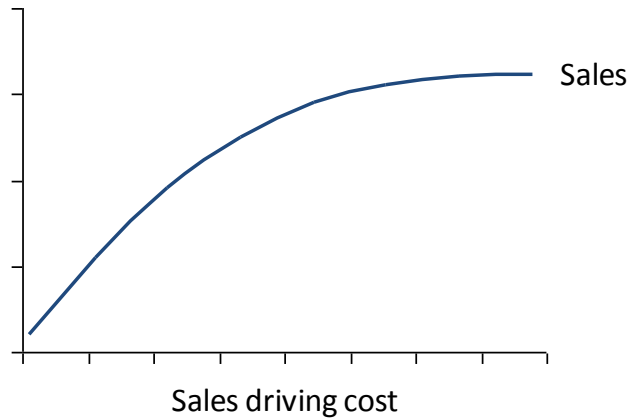
Figure 1. Law of diminishing returns in dependency between Sales and sales driving cost

What is the mechanism to drive sales through investment in expenses? Sales driving cost influence behaviour of customer or potential customer; customer has economical and/or emotional benefits from company investment or becomes aware about the product of the company. It makes customer to make a decision to buy or to buy more than usually or to increase frequency of purchases. Advertising creates awareness about product and it leads to purchases by potential or existing customers. Investment in merchandising offer or in price of the product increase sales as well, because customers benefit from the offer and buy more units than they do at regular price. But as legendary John Wanamaker said – half of investment is wasted. Why? We sell more units at lower price and attract more customers, but at the same time we sell at lower price to those who would buy at regular price anyway therefore we loose those part of investment from which is benefiting customers who would buy at regular price. By distributing leaflets with 'irresistible' offer we distribute to those who decide to buy and to those who are not going to buy. Therefore the part of Sales driving cost which has no influence on customer behaviour and has no positive impact on sales is defined as **un-productive component** of sales driving cost (figure 2).
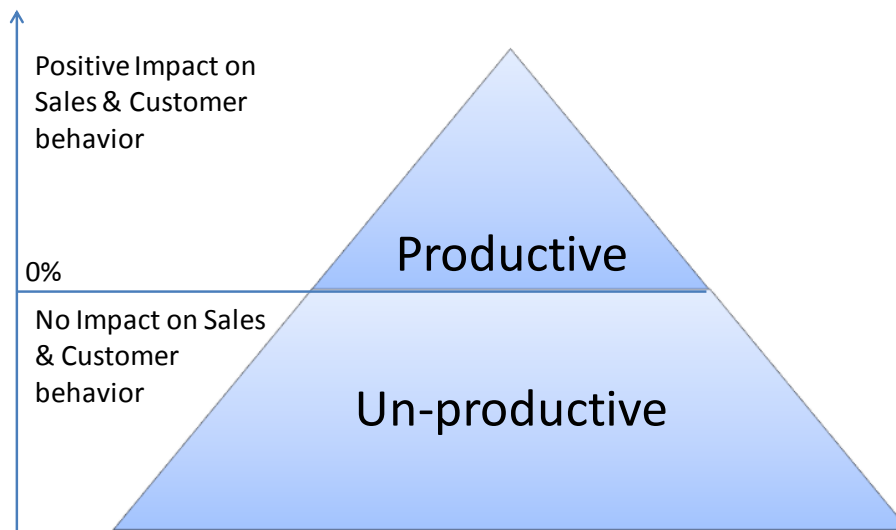

Figure 2. Definition of productive & un-productive component of sales driving cost

Let's assume a company announces an incentive with investment of $1 per customer. The company has 100 customers, 50 out of 100 would buy anyway even without the incentive. 10 from the rest of the customers decide to buy and 40 are not interested in the incentive. Overall investment is $60 but 83% of the cost is un-productive as these 50 customers would buy anyway. Incentive managed to change behaviour of 20% of targeted customers (figure 3). Purchases or increase of purchases from those 10 customers are incremental sales driven by investment in incentive.
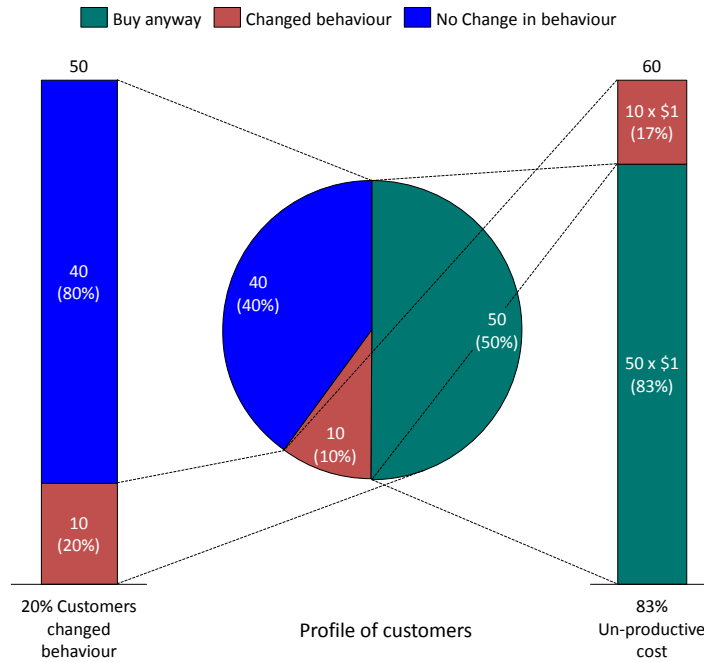
Figure 3. Example of calculation of un-productive cost and percentage of customers who changed behaviour and impacted sales positively

Econometrical models and specifically multivariate regression analysis, path analysis or factor analysis (Boguslauskas, 2010) can help to find out which customers changed behaviour and who would buy without additional stimulus. As in every econometrical model here as well it is very important to have right current and historical data and have understanding which factors might had been impacting the result in order to eliminate or to quantify separately impact of seasonality, economic environment and other factors impacting customer behaviour or supply of products/services. Calculations can be performed by variety of specialised statistical software applications (e.g. SPSS) but simplified calculations can be performed by MS Excel 'Data analysis ToolPak'.

Sales driving cost impact to Sales

Multivariate regression analysis should be applied when identifying sales driving cost impact to Sales. As an input variable we need to use only productive component of Sales driving cost due to the fact that Unproductive component does not have impact on customers and sales. In order to take into account the law of diminishing returns I recommend choosing non-linear – logarithmic regression. For purpose of calculations and depending on tools available logarithmic function can be transformed so that it is linear. When so transformed, standard linear regression analyses can be performed (Boguslauskas, 2010). Sales dependency on Sales driving cost using logarithmic function is presented in equation 1. Linear function can be used in simplified version (equation 2).

$$Incr.Sales = \underline{\beta_1}*ln(Productive\ Cost_1)+\underline{\beta_2}*ln(Productive\ Cost_2)+...+\underline{\beta_n}*ln(Productive\ Cost_n)\ (1)$$
$$Incr.Sales = \underline{\beta_1}*Productive\ Cost_1+\underline{\beta_2}*Productive\ Cost_2+...+\underline{\beta_n}*Productive\ Cost_n\ (2)$$

Where:

Incr. Sales – Incremental Sales driven by investment into activities *1* to *n*

Productive Cost_n – Productive cost element of Sales driving cost invested into activity *n*

$\underline{\beta_n}$ – regression coefficient, presenting the power of the particular productive sales driving cost to incremental sales.

ln – natural logarithm

Multivariate regression analysis allows to find-out regression coefficient $\underline{\beta}$ which shows the power of the particular investment to sales. In linear version (equation 2) $\underline{\beta}$ represents payback from investment into particular activity – e.g. if $1 invested in productive advertising cost brings $10 incremental sales then in this

case β equals 10. Equation should include costs of all types of sales driving activities we invest in – e.g. advertising, merchandising offers, sampling, incentives to customers etc.

Unproductive cost component dependence on size of total sales driving cost

As described earlier - increase in sales driving cost produce diminishing returns. But what happens to ratio of unproductive cost to total sales driving cost when investment increases? Figure 3 presents example where $1 is invested into each customer and where un-productive cost is 83% from total money spend. If in this example $1 spent per customer makes 20% of targeted customers to increase purchases then bigger investment, e.g. $2 spent per customer should change behaviour of more than 20% of customers due to the fact that we are going to impact additional customers - whose who considered $1 not worth enough to make additional purchase. As presented in figure 4 unproductive cost component as a percent to total cost is going to decrease and percent of customers who change behaviour is going to increase when total sales driving cost increase.
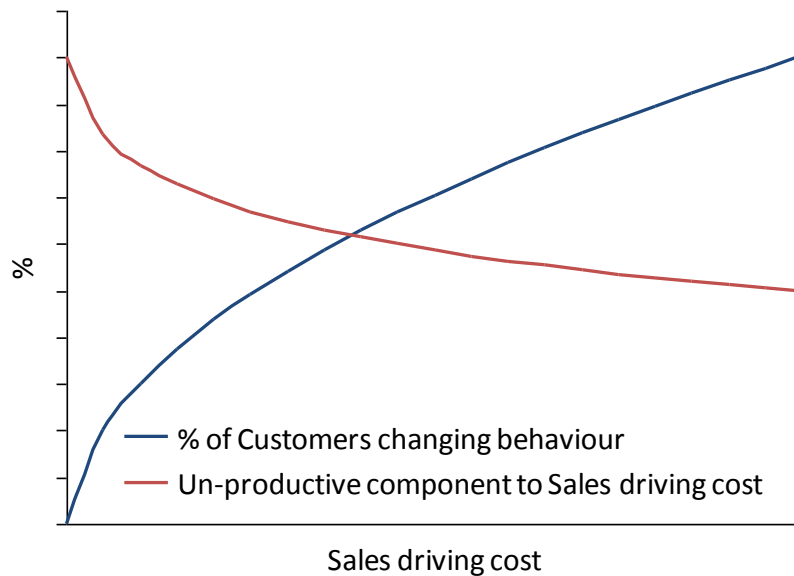

Figure 4. Unproductive cost component decrease & # of customers increase when cost increase

Being familiar with productive cost component behaviour in dependence on total sales driving cost and applying diminishing returns effect to sales in dependence on productive cost we can understand sales driving cost impact on financial results. Table 1 presents example where Incremental sales increase when Sales driving cost increase and incremental sales is directly dependant on productive cost component. Returns from investment are diminishing and un-productive cost as a percent to total cost is decreasing.

Table 1. Impact to Profit & Loss statement of investment in Sales driving cost

Incremental Sales	200	581	767	859	904	926	936
Sales returns from productive cost (β=Sales/productive cost)	20.0	13.8	10.4	8.1	6.5	5.4	4.6
Productive cost	10	42	74	106	138	170	202
Unproductive cost	90	98	106	114	122	130	138
Total Sales driving cost	100	140	180	220	260	300	340
Variable cost (30% from incremental sales)	60	174	230	258	271	278	281
Incremental profit	40	267	357	381	373	348	315
Return on Investment	40%	190%	198%	173%	143%	116%	93%
Un-productive cost as % from Total Sales driving cost	90%	70%	59%	52%	47%	43%	41%

Incremental profit increases up to certain point where increase in incremental sales becomes less than increase in sales driving cost and other variable expenses. Return on investment calculated as incremental profit divided by sales driving cost increases up to the point where incremental sales increase starts to generate lower return on investment comparing to return on total investment. Graphical relationship of sales, un-productive & productive cost and incremental profit is presented in figure 5.
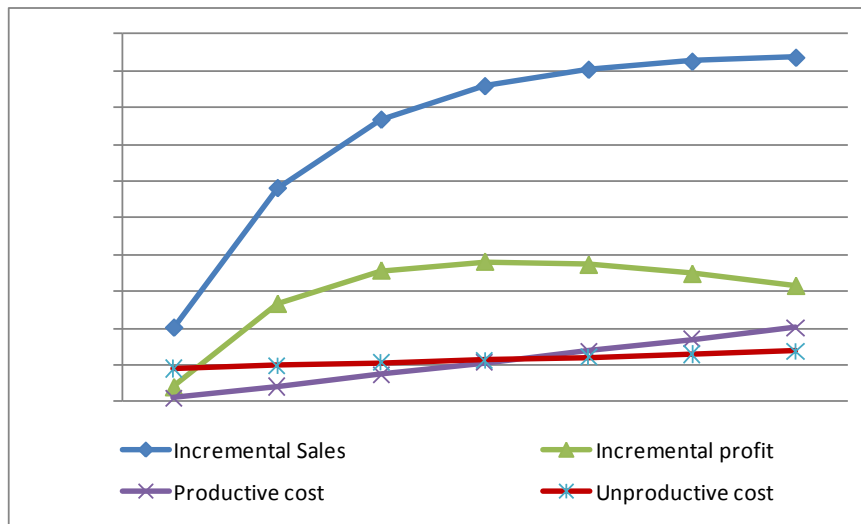
Figure 5. Relationship of Sales driving cost to incremental sales and profit

Techniques to increase sales and reduce un-productive cost

Now after we understood the concept of un-productive sales driving cost it's the time to discuss techniques which help to increase sales and reduce un-productive cost. Behaviour of un-productive cost presented in figure 4 and 5 suggests that choosing **right size of investment** is important. Bigger investment means (1) more customers choose to accept an offer and (2) less unproductive cost to total cost (figure 4). Figure 5 and table 1 show that there is optimum investment level where profit from investment and return on investment reach maximum. So too little investment literally means to waste money – big part of investments is un-productive cost. Too high investment means to waste money as well as return from investment is diminishing and much better alternative is to invest money in another sales driving program or simply increase overall profit of the company by spending less. Right size of investment can be found by solving optimisation problem by applying econometrical models (Boguslauskas&Stunguriene, 2010) or by analyzing different scenarios with support of Excel spreadsheet, similarly as presented in table 1. In this way we can identify the optimum size of investment for particular sales driving program.

In order to have **impactful program it should be selected from several alternative programs** targeting the same or similar behavior of customer. E.g. to increase sales in low sales periods we can choose to arrange sell-off actions, we can give gift with each purchase or customer can receive discount coupon for forthcoming new collection. Post-evaluation of prior experience and estimated financial results of proposed alternative programs can help us to decide. We should sort proposed alternative programs into four groups based on two criteria (figure 6) – first criteria is sales because goal of each sales driving program is to increase sales and second criteria is ratio of un-productive cost to total investment - it helps to think creatively when creating programs and avoid waste of resources with no impact on sales.

Right sales driving program should have relatively high impact on sales with relatively low unproductive cost component, return on investment of these programs are high. If company has such programs in their portfolio they should understand in detail what is driving customers, how program is built in order to achieve minimum unproductive cost and of course program should be used in future. Programs grouped into bottom right corner of figure 6 are usually programs with too low investment overall or too low productive investment – low investment means low impact to sales and high unproductive cost to total investment (figure 5). First we should understand why the program has high unproductive cost. One of the reason as mentioned earlier can be underinvestment overall or alternatively can be that program targets too widely selected segment of customers where there is relatively little proportion of customers who are willing to 'change behaviour' and make a purchase. Solution to this situation is to revise timing of the program, it can be that we push product sales during the high season when customers would buy it anyway, and can be that we target not segmented enough group of customers. Example could be an advertisement run on the channel where big proportion of viewers are aware non-buyers and aware-buyers with little group of non-aware potential customers. As well it can be that we target not the right behaviour of customers – e.g. during economic crisis we want customers to increase size of purchase instead of trying to keep them loyal to our products with any size of purchase.
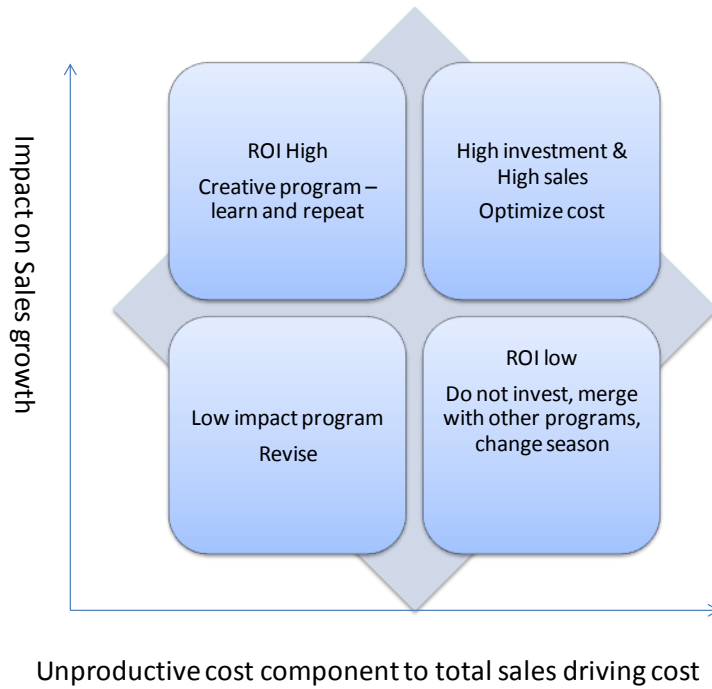
Unproductive cost component to total sales driving cost

Figure 6. Choosing right sales driving program

Solution to these situations is to *change timing/season of the program, target customers more precisely by segmenting them in more detail and reaching them on right channel.* As well it is important to understand if behaviour we want from customer is selected properly at given time and environment. Changing these elements we can reduce unproductive cost, increase productive cost with the same size of total investment as presented in figure 7.
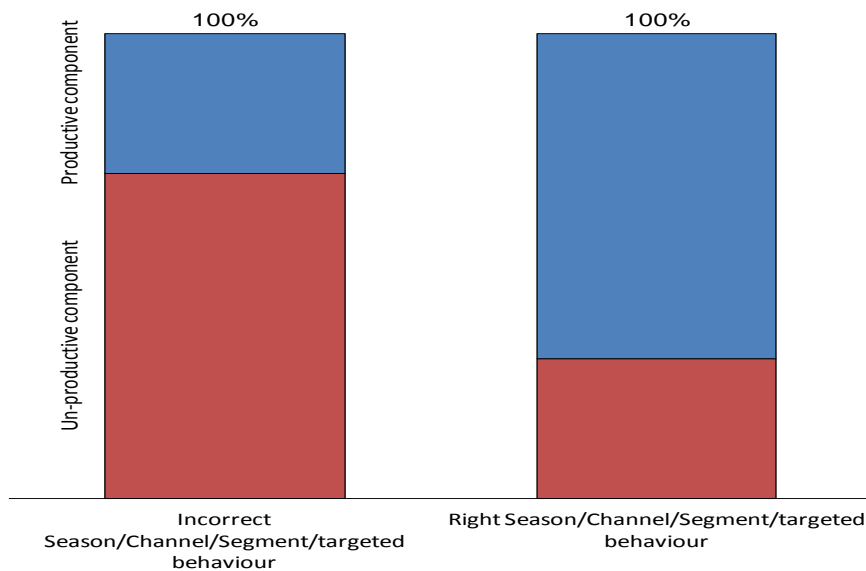

Figure 7. Right selection of season, channel, segment and targeted behaviour of customers reduce unproductive cost and increase sales

If the program is still grouped in the right bottom corner of figure 6 as being not powerful enough due to too low investment then company has two alternatives – (1) to cancel the program and do not waste the resources or (2) the *program can be merged with another program* which aim to target the same behaviour of customer at the same time of sales or later in the year. It is more beneficial to have one strong program versus two weaker ones due to the reason that part of cost is unproductive and lower investment causes

higher unproductive cost. Merging two similar programs or having one program per year instead of two makes usage of resources more efficient and has bigger impact on sales (figure 8).
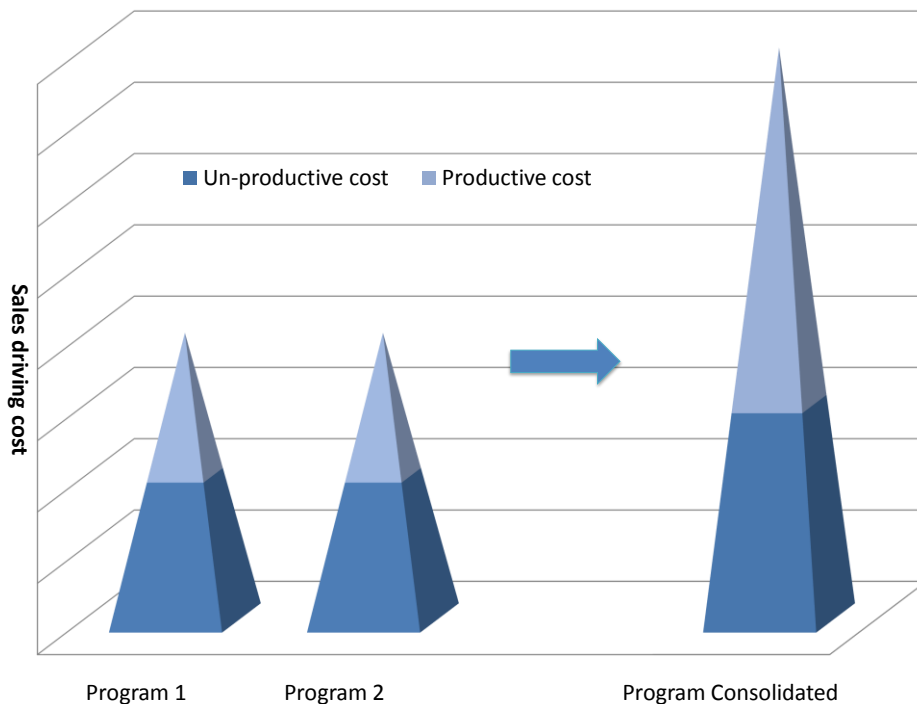

Figure 8. Merging several programs with high unproductive cost into one program increase productive cost and sales

Low impact programs (bottom left corner of figure 6) have low unproductive cost but at the same time there is no significant impact on sales. These programs stay un-noticed by customers or customers are not interested in it. Few hypotheses should be checked to understand why these programs do not perform. First hypothesis – we had attractive program but it was not communicated to customers well and message did not reach customers. Second hypothesis – we are asking from customers too much effort in comparison to benefits they can have from the offer (figure 9). Only those sales driving programs are going to have high impact where customer effort is adequate to benefits customer is going to receive. If we require minimum effort with big benefits then we do not drive sales but simply waste money to unproductive cost. Different situation is if we require increasing customer purchases during economic crises with relatively small benefits, in this case customers are not going for such a program and company does not generate sales from this program. And if benefits are small and effort required from customer is small then program stays unnoticed and bigger part of expenses will fall into unproductive category (figure9).

Programs with relatively big impact on sales and relatively big cost (top right corner of figure 6) should be optimised from cost point of view. If benefit received by customer equals or is close to additional sales from customer then no wonder why high sales are generated – company simply "buy sales". If it is not the case and high sales are generated with high cost then size of investment should be optimised or customers should be targeted more precisely as described earlier. Segmentation of customers into the smaller groups and targeting specific behaviour from each group would allow reducing unproductive cost significantly. The ideal solution to reduce unproductive cost in this case would be to have special program for each individual customer - e.g. customer who made ten flights with airlines last year would receive and incentive to make more than ten flights receiving benefits for each flight after tenth. Example in advertising area could be advertising on Google or Facebook, these companies are able to target advertising very specifically to each individual person and the message reaches exactly the type of customer it should reach.
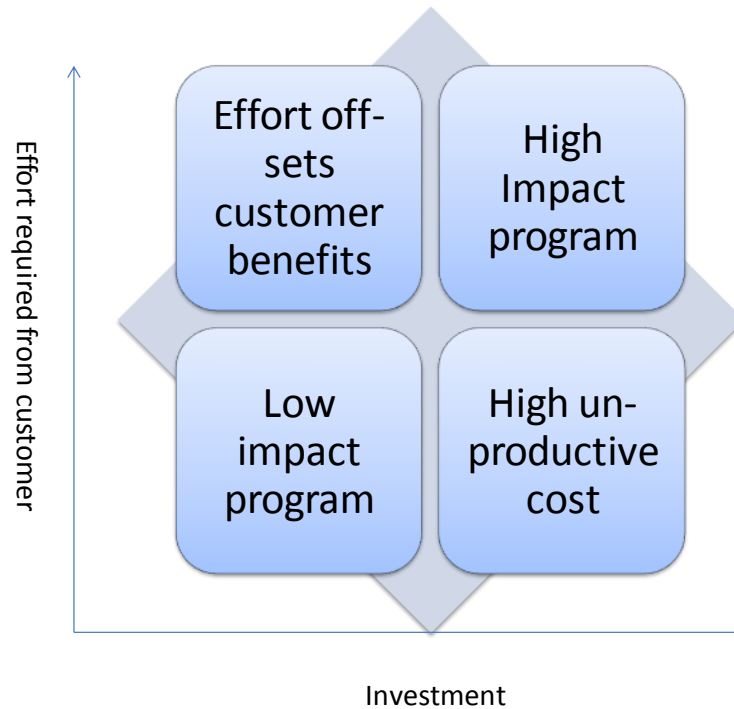
Figure 9. Right sales driving program requires additional effort from customer and gives significant benefits to customer

Conclusions

The techniques described in this article would allow increasing sales and using investment productively – each sales driving program should have right size or optimal size of investment; programs should be selected from multiple alternatives; right time for the program and right channel to reach customers, right targeted customer behaviour; merge or cancel programs with high ratio of unproductive cost; find right balance between effort requested from customer and benefits to customer; customise program to each customer or segments of customers.

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