# NEW APPROACHES TO CUSTOMER BASE SEGMENTATIONFOR SMALL AND MEDIUM-SIZED ENTERPRISES

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*The primary purpose of this paper is to explore current praxis and theory related to customer segmentation and to offer an approach which is best suited for small and medium sized enterprises. The proposed solution is the result of an exploratory research aiming to recognize the main variables which influence the practice of segmenting the customer base and to study the most applied alternatives available for all types of enterprises. The research has been performed by studying a large set of secondary data, scientific literature and case studies regarding smaller companies from the European Union. The result of the research consists in an original approach to customer base segmentation, which combines aspects belonging to different well spread practices and applies them to the specific needs of a small or medium company, which typically has limited marketing resources in general and targeted marketing resources in particular.*

*The significance of the proposed customer base segmentation approach lies in the fact that, even though smaller enterprises are in most economies the greatest in number compared to large companies, most of the literature on targeting practices has focused primarily on big companies dealing with a very large clientele, while the case of the smaller companies has been to some extent unfairly neglected. Targeted marketing is becoming more and more important for all types of companies nowadays, as a result of technology advances which make targeted communication easier and less expensive than in the past and also due to the fact that broad-based media have decreased their impact over the years. For a very large proportion of smaller companies, directing their marketing budgets towards targeted campaigns is a clever initiative, as broad based approaches are in many cases less effective and much more expensive.*

*Targeted marketing stratagems are generally related to high tech domains such as artificial intelligence, data mining and marketing analytics and presuppose the availability of sophisticated computer software and specialized personnel. The methodology proposed in this paper takes into consideration the fact that, due to financial and time-related constrains, smaller companies need a more practical and straightforward solution for segmenting their customer base. The simplicity of the solution, however, should not come at the expense of its efficiency. The original contribution of this paper resides precisely in the fact that it aims to offer the best of two worlds: the simplicity and cost-effectiveness of plain methods which can be used without the aid of specialized software and the high return on investment given by the use of artificial intelligence algorithms such as clustering.*

*The main implications of this paper relate to the fact that it draws attention to how targeted marketing can be performed successfully by companies with restricted budgets by providing an actionable set of guidelines which can be put into practice by smaller enterprises using limited efforts and resources.*

*Keywords: segmentation, customer base, small and medium sized enterprises, cluster analysis, targeted marketing*

*JEL classification: M31*

## I.Introduction

Data about customers is extremely important, as it constitutes the basis of efficient marketing decisions. The business logic of performing a customer base segmentation is concisely described by Philip Kotler: "The key point is that the marketeer needs to define the target market as carefully as possible. The *mass market* is too vague. It is hard to make a product that everyone will want. It is easier to make a product that some will love. This has led businesses to pursue niches and mini-markets. But the downside is that as markets become sliced into finer segments, the resulting low volume in each will permit only one or a few companies to survive in that market." (Kotler 2003: 122)

This is why many businesses go out of their way to collect as much customer-related data as possible. However, for those businesses which deal with a large clientele, collecting customer profiles and sales data is not a solution all by itself and the real challenge is making sense out of great volumes of data. The end goal of dealing with customer data is developing marketing segmentation strategies and tailoring marketing activities to customer characteristics in order to use resources more efficiently and increase the success of the activities. For this purpose, patterns need to be recognized and, furthermore, shaped according to the business objectives. Identifying groups of customers which have similar needs is a first step for targeting marketing efforts and budgets towards the most rewarding groups of customers. Sometimes, segmenting the customer base is as simple as performing a classification of customers by one or more characteristics, while at other times a complex cluster analysis may be required, which is often done with the aid of specialized computer software.

The most common data sources available for the purpose of performing a customer base segmentation are data sets of commercial transactions, third party marketing research data and data obtained from customized research. The main advantages of customer segmentation are the following:

- it simplifies the data related to customers for analysis, as it groups together data sets which are relatively homogenous and therefore facilitates pattern recognition and helps reveal hidden relationships
- when building a model to predict future purchases, it is useful to group the data in order to reflect the underlying characteristics of different segments of customers; if several models are generated - one for each customer segment - the predictions will be, in most cases, simpler and more accurate
- response models can be developed for marketing campaigns based on past behavior of a certain customer segment

Segmenting the customer base is derived from categorical or continuous data and can be done based on various criteria, among which:

- geographic criteria - customers can be divided into local, national and international or can be categorized into groups based on their geographic location
- demographic criteria such as age and sex
- psychographic criteria such as behavior and attitudes, including brand loyalty and product preferences
- economic criteria expressed as values or ranges related to the amount of business transacted over a given period of time, the contractual value, profitability etc.

## II. Customer base segmentation approaches

Segmenting the customer base can be performed in many different ways according to the business logic. However, all the approaches have one thing in common: they involve a pattern recognition process, which means assigning labels to each individual customer. These labels can be further on used to group together individuals which share one or more distinctive characteristics that differentiate them from the individuals which are not included in the group.

Grouping customers based on some measure of inherent similarity facilitates choosing the most suitable target segments according to the marketing strategy and using resources more efficiently by customizing the marketing campaign to each selected target group.

Pattern recognition algorithms aspire to supply a reasonable output for all inputs and utilize fuzzy logic, operating with fuzzy logic variables which may have a truth value that ranges in degree between 0 and 1. The reasoning in fuzzy logic is similar to human reasoning and allows for approximate solutions. The simplest and most common approaches to customer base segmentation are performing a simple or multi-criteria classification and employing a cluster analysis.

Classification assigns each input to a set of classes. Statistical classification represents identifying the sub-population to which a certain new observation belongs, based on quantitative information on one or more characteristics and taking into consideration an initial training set of data containing observations whose sub-population is given.

Clustering is an application of associative rules mining and it aims to group the data into sets of related observations or clusters. Observations within each group are similar to observations within the same cluster and at the same time dissimilar to observations in other clusters. In contrast to classification, which is a supervised learning technique, clustering is unsupervised. There are no initial training data sets containing predefined classes and no examples to indicate possible relations among the data.

Due to the fact that market and customer base segmentation have in time been proven to be essential for the success of any regular business, from big corporations to medium and small enterprises, the domain is continually under study and various mathematical approaches, as described above, are designed with the aim of optimizing the results. In order to perform classifications and clustering on large sets of data, specialized computer software and personnel are required. While companies with large turnovers are generally in the position to be able to allocate significant financial resources and personnel to attain this objective, for the small scale enterprises the problem of customer base segmentation can be more difficult to control. The basic dilemma for most startups and the majority of established small and medium companies is the fact that marketing research requires time and money, while they generally operate in an extremely dynamic business environment and have a limited budget that must cover all their activities, including promotion and sales support.

## III. Exploratory research regarding targeted marketing approaches suitable for small and medium-sized enterprises

The final purpose of the present research is to formulate a viable strategy for a small scale business that needs to develop but does not have the resources and the logistics that large companies employ in marketing and sales support research. In order to arrive at the conclusions presented in this paper and to create a set of guidelines to be used by small and medium-sized enterprises in planning targeted marketing campaigns, an exploratory research has been performed with the following objectives:

- to get familiar with the concepts of targeted marketing and customer base segmentation in general and in the context of small and medium-sized enterprises in particular
- to recognize the most important constraints which smaller companies have to face when planning marketing campaigns
- to determine the most important variables and to identify the most common alternative approaches available in customer base segmentation
- to generate ideas and create an original approach customized for smaller businesses

The following research methods have been employed:
- the analysis of secondary data from institutes of statistics, journals and publications
- case studies

- in-depth interviews conducted with marketing specialists or entrepreneurs with a background in small and medium-sized businesses
- focus group discussions with marketing specialists working in the small and medium-sized business environment

The research was done using a flexible approach, based on collecting ideas from various scientific writings and case studies and making intuitive associations, with a focus on qualitative aspects and formulating empirical conclusions. The results of the exploratory research consist in a set of guidelines created to be used by small and medium-sized businesses in the process of performing customer base segmentations. This research will be further expended in the future with a comparative analysis of different customer base segmentation approaches, taking into consideration the following aspects: costs, effort to implement, efficiency measured by key performance indicators such as activation rate, sales uplift and return on investment.

## IV. Guidelines for performing customer base segmentations by small and medium-sized businesses

The result of the exploratory research performed consists in a model approach to the issue of customer base segmentation, which is intended to be at the same time effective, low-budget and fast so that it can be employed by small scale companies. The approach is based on principles related to computational data mining in general and cluster analysis in particular, but it can be applied in an empirical way, without the use of sophisticated software or data warehouses.

The end goal of the proposed method is to obtain a categorization of the customer base which facilitates addressing each group of customers with a customized offer, increases the success rate of the marketing campaign and makes business sense in terms of logistical and efficiency-related criteria. The method must also provide an easy way to incorporate new clients into the categorization and to adjust to the changes that take place with the customers that have already been assigned to a group. The most important issue is the selection of the criteria which will stand at the basis of the segmentation. In order to facilitate an empirical approach, the method proposes the recognition of 3 segmentation criteria which are most important. In order for a specific characteristic to be used, besides being relevant, the condition is that the company has and is further on able to collect the necessary data for estimating the value of the characteristic. The company will further decide whether or not to use all of the 3 criteria in performing the segmentation. However, the number of criteria should be limited to 3 in order to allow the graphical representation of the customers in a 3-dimensional space, having as axes the criteria identified as being the most important.

The next step involves the creation of "anchors", which will be defined as real or hypothetical clients which are representative for a whole group. For an established company, the selection of its "anchors", as a basis for the segmentation process, should capitalize on the Pareto principle (the 80–20 rule or the law of the vital few) that, applied in economy, states that roughly 80% of the sales come from 20% of the clients. Practically, the segmentation process starts with the graphical representation of the best clients. The number of customers which will be taken into consideration as "best clients" should be, for practical reasons, relatively small in order to facilitate performing the segmentation without the use of sophisticated computer software. The method can also be applied to a startup company, in which case the "anchors" can be based on theoretical (ideal) clients.

If collecting data on the 3 criteria selected as axes requires special efforts, the company should invest most of the resources in obtaining precise measurements about the most important clients. Data for the clients which are less important from a business point of view can be approximated without causing a great negative impact to the end result. If two or more of the best customers are considered to be situated graphically very close to one another, they will not form separate "anchors", but will be replaced by a single "anchor" whose coordinates will be calculated as an

average of the coordinates belonging to the individuals. To increase the relevance of the graphical model, the company can calculate a weighted average, considering as weights economic criteria related to the value of the customers.

After all the "anchors" have been established and graphically represented (Fig. 1), the 3-dimensional space will be divided in such a way as to obtain a distinct region surrounding each anchor. The division can be done in an approximate manner, based on business experience and intuition. If some "anchors" are considered more important than others, they can receive a larger space in the geometrical model. After the space has been divided, all customers belonging to the customer base can be graphically represented and assigned to a group (Fig. 2). However, it is no longer necessary to continue the graphical representation, as the classification can be further performed based on algebraic calculations involving coordinates. To speed up this process, the calculations and classifications can be automatically performed in a spreadsheet, with the aid of formulas.
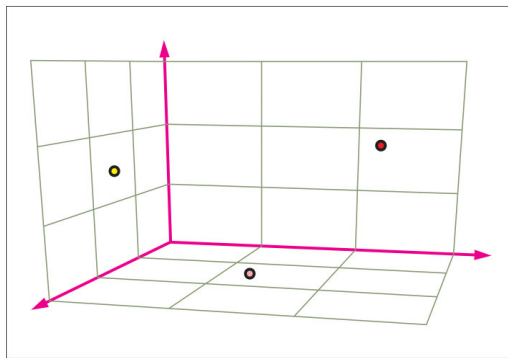


Fig. 1.   Graphical representation of the

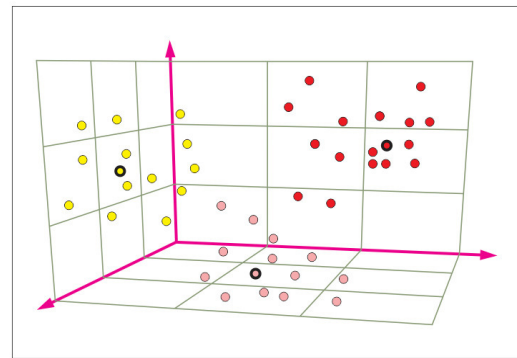customer groups (created by the author)



Fig. 2.   Graphical representation of the "anchors" (created by the author)

As a general rule, this whole process is designed as an iterative operation which involves trial and error and is being conducted, controlled and dynamically adjusted in strict correlation with the real feedback that is obtained from the market. The accuracy of the segmentation process is to be reevaluated periodically, whenever actual sales results or new sets of market data become available.

Companies that apply targeted marketing approaches need to pay attention to the following constraints:

- data set size: the selected target groups can only be used for marketing campaigns if they have an appropriate size; if a target group is too large for logistical reasons, it can be further divided into subgroups and if the size of a target group is insufficient in terms of the expected results of the campaign, it can be combined with other groups and addressed with an adjusted campaign message

- the identified target groups should be interpretable and actionable: the combination of characteristics based on which the groups have been defined should ideally be extremely relevant from a business logic point of view; the rationale behind the customer base segmentation should be intuitive and there should be a high probability that all the customers within a group would react positively and similarly to the campaign message

- if the customer base is segmented in different ways, according to different criteria, and the results of the segmentations are combined, special attention must be paid to overlapping groups, as it would be highly undesirable if some of the customers are included in more than one target group and addressed with many campaign offers, potentially conflicting, at the same point in time

- a balance must be obtained between the number of targeted segments and the corresponding campaign costs; the more customer groups are targeted, the higher the activation rate and, at the same time, the higher the costs; when deciding which customer groups to target, the return on investment should be forecasted based on the expected activation rate and the decision should be based on trying to achieve the highest return on investment

- legislative constraints should be taken into consideration especially when having customers from different geographical regions or industries in the same customer group; the terms and conditions of the promotional offer targeted towards a group should comply with the legislation which affects all of the customers from that group

The customer base segmentation represents an important step in performing a targeted marketing campaign. The typical succession of steps can be described as follows: defining the marketing strategy; determining the available budget; performing the customer base segmentation; setting the planning parameters such as offer, discount value, promoted products; documenting the decisions made regarding the campaign and consolidating all data in the form of a campaign package containing the campaign objective, campaign message, campaign costs, available funds, and customer list including contact information; implementing the campaign based on the campaign plan; measuring the results of the campaign and collecting feedback; analyzing the results and drawing conclusions applicable in the future planning process.

## V. Conclusions

Segmenting the customer base according to the proposed set of guidelines is not an automatic task, but rather an iterative process of knowledge discovery. The segmentation can be perfected over time by adjusting the parameters based on the feedback collected from the market. Even after a very good configuration of the model has been identified, changes still have to be made periodically to reflect the transformations that have happened to the customers. The proposed method is very effective assuming that a small number of customers generate a large percentage of the company's turnover, which is true for most small and medium-sized companies. In case of an atypical customer distribution, the model needs to be adjusted.

The original contribution of the model is the fact that it translates a scientific approach to customer base segmentation to an empirical method which can be employed with minimum resources by smaller scaled companies, without loosing much in terms of efficiency. The method applies the most important principles on which clustering algorithms are based and adapts the approach in such a way that it can be performed intuitively, without the use of specialized software, offering a guide for smaller companies to segment their customer base and perform targeted marketing activities.

The importance of this paper lies in its aspiration to draw attention to the fact that targeted marketing is a very important alternative for small and medium-sized businesses striving to invest their limited marketing resources in the most efficient manner available. Its role is both theoretical, as it aims to stretch out the concept of customer base segmentation to the small and medium-sized business environment and practical, as it provides an actionable set of guidelines for the use of smaller scaled companies.

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