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Diploma Thesis

**MARKET SEGMENTATION – CASE STUDY OF
A SELECTED COMPANY**

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Economics and Management

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Declaration

I declare that I have worked on my diploma thesis titled „Market Segmentation – Case Study of a Selected Company “ by myself and I have used only the sources mentioned at the end of the thesis.

In Prague 20th March 2011

Bc. Radka Szabová

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**NÁVRH METODOLOGIE SEGMENTACE
ZÁKAZNÍKŮ VYBRANÉ SPOLEČNOSTI**

**MARKET SEGMENTATION – CASE STUDY
OF A SELECTED COMPANY**

Souhrn:

Tato diplomová práce se zabývá segmentací trhu ICT společeností s ohledem na vybranou společnost Project & Engeneering (personální agenturu zaměřenou na nábor ICT specialist). Tato společnost má svoji zavedenou marketingovou strategii založenou na osobním přístupu, spolehlivosti, flexibilitě, znalosti ICT prostředí, která je komunikována zákazníkům.

Teoretická část diplomové práce poskytuje přehled přístupů k segmentaci a segmentačních technik, které pomohou s porozuměním segmentace jako takové i segmentace, která je součástí praktické části této práce.

V praktice části jsou ICT společnosti segmentovány pro účely vybrané společnosti. Dvoustupňová shluková analýza, která je provedena programem SPSS, je použita k odkrytí jednotlivých shluků. Pro veškeré odkryté segmenty je vypracován profil na základě zkušenosti a diskuzí s odborníky v oblasti HR marketingu.

Segmenting evaluation matrix (Segmentaci hodnocení matice, metoda k zacílení segmentů) je použita k porozumění vztahů mezi jednotlivými shluky a pomáhá se zacílením. Veškeré výsledky jsou zpracovány v návrzích a doporučení, které mají pomoci společnosti s rozhodováním na které segmenty by se měla zacílit.

Klíčová slova: segmentace trhu, shluková analýza, segmenting, positioning, targeting,

Summary:

This diploma thesis deals with market segmentation of ICT companies with regard to the selected company Project & Engineering (personnel agency focused on recruitment ICT specialists). This is an existing company, which has their marketing strategy based on personal approach, reliability, flexibility, knowledge of the ICT industry which is communicated to their potential customers.

The theoretical part of this diploma thesis provides a summary of possible segmentation approaches and techniques which helps with understanding segmentation itself. It provides necessary background knowledge for the practical part.

In the practical part, ICT companies are segmented for the purpose of the selected company. The two-step cluster analysis is done by SPSS to uncover segments. All uncovered segments are developed based on experience and discussions with HR marketing experts and the profile is then created. The segmenting evaluation matrix is used for better understanding of relations between clusters which helps with targeting. All results are considered, proposals and recommendations are created to help the company with decisions about which segments the company should target.

Key words: market segmentation, cluster analysis, segmenting, positioning, targeting

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1. Introduction

The central theme of this diploma thesis is market segmentation. Marketing experts describe market segmentation as the cornerstone of modern marketing. Uncovering divergent customers' needs and wants, their mastery with effective allocation of resources, is linked to commercial success and emphasized strength over competitors.

Success is of course influenced by many different factors. However, without the first step, which is market segmentation, it is impossible to reach it.

The selected company Project & Engineering is a small IT company with a department performing as a personnel agency focused on ICT specialists. Their performance cannot be accurately evaluated. They still feel the need to shape their targeted group of customers that helps them with simplification and economization of inner processes that lead to customer satisfaction.

2. Objectives of the Thesis

Project & Engineering, the selected company, has not targeted to any particular segment until recently. Their customer care dropped behind in continuous and systematic work, because each of their current customers needs special care. Any work with customers and addressing new customers is expected to be easier if the company implements a prepared CRM system and targets their interest to particular customers. The results of any segmentation take effect after implementation and test operation. The aim of this diploma thesis is to prepare data based on which the company can decide which segment to target.

The main objective of the diploma thesis is to identify segments for the purposes of the selected company.

The main hypothesis is: ICT business-to-business market can be segmented for the needs of personnel agencies.

Partial objectives have to be fulfilled to reach the main objective. The aim of the theoretical part is to define a theoretical basis of segmentation with regard to business-to-business markets of services.

The practical part of the diploma thesis includes set objectives. The first one is gathering data needed for segmentation. This data has to be purged and filtered before it can be used. The next step is defining segment variables. The core objective of the practical part is to identify segments, check, and follow the development of uncovered segments. Comments and recommendation to targeting are provided in the conclusion.

3. Methodology

Literature research was used for the definition and summarization of the theoretical basis of segmentation with regard to business-to-business markets of services methods of specifications , comparison were used.

The data for this analysis was gathered from the Albertina database which includes all companies enrolled in trade and register of the Czech Republic. ICT companies were filtered based on their belonging to CZ-NACE (Czech Industrial Classification of Economic Activities). ICT sector includes following groups: CZ-NACE 26.1, 26.2, 26.3, 26.4, 26.8, 46, 58.2, 61, 62, 63.1, 95.1. The second filtering criterion is the legal form of a company. Entities belonging to the group of entrepreneur-physical person were sorted out because of the assumption that physical people would not use the services or personnel agencies and their large number would negatively influence the clustering method. All continuous variables were standardised.

The two-step cluster analysis is done by the statistical software SPSS. It is used for segment identification. The reason for the usage of the two-step clustering analysis is the large size of the data set and that both categorical and continuous variables are used. The first step of the analysis is preclustering. The aim is to reduce the size of the matrix that contains distances between all possible pairs of cases. As the second step is hierarchical clustering, an algorithm which qualifies how far apart each two cases are is used. It starts with identifying individual pairs of customers who are most similar in terms of basis variables then nearby cases can be added to the pairs until all cases have been joined graphical representation of the method is a dendogram. Result from the analysis are expanded and proceed for future development of clusters.

The discussions with specialists in field of HR marketing (Olga Kulikova Product manager of LMC and Co-owner at T&CC s.r.o., Zdeněk Novák Managing director of

Project & Engineering s.r.o., Jana Laboha Division Manager at Personnel & Engineering) proves that uncovered segments with cluster analysis are reasonable and will help develop defined segments.

The segmentation evaluation matrix is a targeting method that is suitable for examining whether the segments are able to operate within the existing marketing mix. This method is used for the comparison and visualization of the defined segments based on criteria of attractiveness and segment qualifying .

The results of segmentation evaluation matrix and development of clusters are discussed in the proposals and recommendation.

4. Theoretical Part

4.1. Introduction to Market Segmentation

Market segmentation plays an important role in the practical marketing strategy. In the past, companies produced their products and then they tried to sell them. Nowadays, it doesn't work like that. There is always the risk that the company may produce something which nobody will want. However, there is still a demand for different kinds of products or services. Companies have to know what is demanded and what is worth producing, if it makes a profit. The new "mass" market is full of abundant choices; the market is split into several micro markets with different wants, perceptions, preferences, and buying criteria so the company has to change the process from making a product and selling it into a new concept of value delivery that is necessary for competitiveness.

Marketing has to adapt to this change. A marketing strategy gives a guide, direction, goals for better orientation and marketing management practices. It specifies market orientation, focuses on customers, and it includes a current situation of the company's possibilities and sources with regard to the company goals. Marketing strategy creation is based on marketing research. The most important part of the marketing research is marketing segmentation. A market is not homogenous; a company cannot connect with all customers in a large, broad market because consumers vary based on various criteria. Companies need to identify in which market segments they can operate effectively.

The question of marketing segmentation level should be discussed. Mass marketing provides one product to all buyers, which can lead to lower costs, lower prices and higher margins. This approach is interesting because a large-potential market is created. Coca-Cola applied this strategy when it sold only one kind of Coke in 6.5-ounce bottles (Kotler, 2006). There was no need for segmentation. Nowadays, this approach is not applied. Even Coca-Cola had to launch different products.

Companies tend to do micromarketing at one of four levels (Kotler, Keller, 2006, 240 p.): segments, niches, local areas, and individuals. Niches are specifically defined customer groups seeking distinctive mix of benefits with usually very specific needs. They are identified by dividing segments into subsegments.

The new trend is reflected on local marketing. Marketing activities tend to be closer and personalized as much as possible. This leads to experiential marketing that is promoting a product or a service not only through the connection of features and benefits of the product but also with experience that is connected with the product.

The market segmentation concept is understood as finding a competitive advantage based on choosing the right segments. The goal is to provide customer value and customer satisfaction for a particular segment and profit from it. Most companies are not able to serve the whole market; they are focusing on particular segments. These segments are identified based on customer needs and satisfaction. A product or service that is designed for the segment should fulfill both. The business logic behind the segmentation is a firm's presumption that maximum profits are achieved when pricing levels discriminate between segments. Market segmentation represents differentiation of a market into identifiable groups of customers or smaller markets (market segments). The aim of market segmentation is to satisfy needs by an appropriate marketing program.

Many firms apply segmentation because they believe that it helps them build their competitive advantage and thus enhance business performance.

Examples of a market segment definition:

“Market segmentation is the process of grouping similar consumers or business customers together in a market segment, in which the consumer or business customers exhibit similar requirements and buying characteristics.” (Dibb, Simkin, 2009, 1 p.)

“Market segments consist of groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.” (Myers, 1996, 16 p.)

Customers who share a similar set of needs and wants are in the same market segment (Kotler, Keller, 2006, 240 p.). These segments are not created but they occur naturally and it is the marketer's task to identify them in order to adjust the design, price or delivery of a product or service.

The process of segmentation is most usually described on models of consumer markets however similarities between all kinds of markets can be seen and the process can be

applied. The common framework of a broader concept of market segmentation consists of the following steps (Koudelka, 2005, 145 p.):

1. Definition of the market
2. Determination of the important criteria
3. Identification of segments
4. Development of segments

The process of segmentation can be described in a more specific way. For example, the last point above can include the steps below:

- Identification of needs that are different for particular segments
- Naming of segments
- Evaluation of behavior of each segment
- Estimation of segment size

It is a very specific view of the segmentation process. Various approaches occur in different publications. Myers's (1996) concept represents a slightly different and more practical approach to segmentation. The framework of the general procedure for segmenting markets consists of the following steps:

1. Decide on segmentation variables
2. Decide on data analysis methodology
3. Apply methodology to identify several segments
4. Describe all segments using basis and other variables
5. Select target segment(s) to pursue
6. Develop marketing mix for each target segment.

Some similarities can be recognized when comparing these two processes. Recognising the criteria is a very important step. The variables are identified based on these criteria. The identification of segments is naturally the next step. The identified segments need to be developed for better understanding and for future purposes. The Myers's process of market

segmentation takes it much farther. The next step is the selection of the right segments and it continues with the development of the marketing mix for each targeted segments.

The principles of the above mentioned process of segmentation can be easily seen in the well-known market segmenting, targeting and positioning (STP) marketing. The STP marketing can be understood as three steps of the Market segmentation (Dibb, Simkin, 2009) The segmentation process of market segmentation is there to identify segments and develop them to provide as clear picture as possible.

Segmenting

The first step is meaningful identification of segments. Segments are clustered according to base variables (also called segmentation variables). Base variables (or a combination of variables) should enable the creation of clusters with different requirements. Identified segments are examined and a profile of each segment is created. The last step of segmenting is checking the validity of the segments that emerged.

Targeting

The targeting stage selects which and how many segments a company will serve. The company must balance between attractiveness of segment opportunities, available resources and capabilities of company with regard to competition. Two main questions have to be answered. The first question addresses marketing strategy that describes the problem of the number of segments to target. The second one is of assessing the attractiveness of segments that particularly asks which segments should be targeted.

Positioning

Positioning follows the segmenting and the targeting stage. The aim is to create and implement a chosen image of a product or service to consumer, to position the product in the mind of the targeted customers. Because the product is being placed among existing brands, customers must be convinced of the value of the product and see its place in the market compared with competing products. As a first step in each targeted segment, companies have to understand consumer perceptions of all main products. In reaction to this knowledge, companies need to create appropriate marketing programs towards consumers that fit to consumer perceptions.

Positioning provides a connection between a target strategy and the marketing program that were developed. The product has to fulfill conditions that the market segment requires, the product should have suitable customer service, appropriate price, convenient distribution channels ... In practice, positioning of a product or brand is affected by customer belonging to the market segment, brand itself, organization behind the brand, competitors and other market conditions (Dibs, Simkin, 2009).

4.1.1. Segmentation Barriers

Every process is accompanied with problems and obstacles, which have to be dealt with. Knowing where the barriers are helps preventing occurring problems. Managers may tend to just trust their instincts about the market rather than spend time and energy with uncertain segmentation research. Things that make the segmentation useful for managers are the simplicity of choices and the clarity of results which help them make a decision in each step of segmentation.

Segmentation barriers occur before, during and after segmentation. Dibb, Simkin (2009) show the range of barriers before during and after segmentation and divide them into several categories. Infrastructure barriers occur even before the start of the segmentation process. Corporation inflexible behavior and resistivity to new ideas, lack of general marketing knowledge and experience, poor understanding of segmentation, and poor communication can be mentioned as examples of barriers. Process barriers cause problems during the process of segmentation, influence the creation of segments or target market strategy. Implementation barriers describe problems that arise after the segmentation when results of the segmentation are to be implemented. Segmentation barriers can be categorized as relating to operation, structure, and leadership; resources and skills; the marketing information system and data; and communication and coordination.

Because there are many barriers that may block successful segmentation, practitioners need to recognize these barriers in order to prepare effective strategies how to overcome them.

One more important clarification has to be made. The difference between market segmentation and customer segmentation has to be explained. Both are understood similarly, they are using similar techniques and approaches. The difference is that customer segmentation segments existing customers of a company and it is mostly used for

consumer markets. The example of customer segmentation can be segmentation of customers of a supermarket.

4.2. Segmenting

Segmenting is the initial part of the segmentation process. The phrase represents the executive stage of the actual segment uncovering.

4.2.1. Base Variables

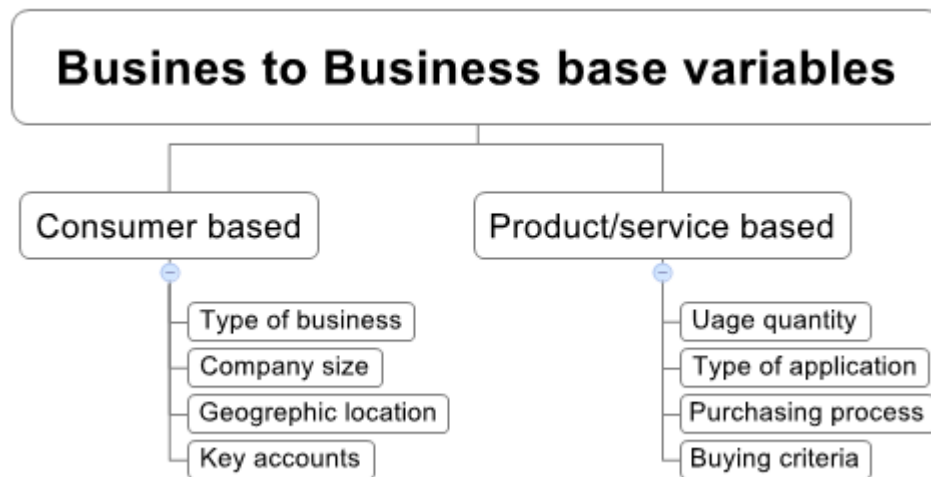
Base variables, in other words market criteria, are understood as characteristics connected to the market, customers, their needs and wants, or products that are used for uncovering market segments. They are, for example, the market size, location, gender, price... The same characteristics can also be used for targeting. In this case marketers talk about criteria of attractiveness.

Base variables have a wide range of classification. Marketers differ between dependent and independent variables, customer based and product/service based variables, variables connected to consumer market or business-to-business market. The classification has a purpose in clarification of variables that are selected and their usage in the segmentation process.

Dependent variables respond to (depend on) the independent variable and they must be explained or understood during the experiment (example: usage rates, satisfaction ratings). Usually there is only one dependent variable that is explained by independent variables by a model. Independent variables are used to explain the dependent variable (example: geographic area product category). The distinction between dependent and independent variables enables distinction among statistical techniques that are used for segmentation purposes.

Because the practical part deals with business-to-business market segmentation it is focused on variables connected with it. The most common type of business-to-business market base variables mentioned by Meyer (1996) are shown in the Figure 1 below.

Figure 1 Business to Business base variable



Source: Own source

Company size shows a distribution of size. A different type of business does not necessarily need to have different needs. On the contrary, smaller companies usually have different needs than larger ones within the same business. The geographical location of consumers is useful when the company has to choose which area to serve and to find out where the customer concentration is high. Key Account is a special marketing mix that is provided for large consumer business partners. This special marketing mix is worth launching with respect to size of the firm. These firms represent a particular segment.

Usage quantity is used because the size of a company does not always correspond to its needed quantities of goods and services. The type of application of a product/services plays a major role. A product can be used for production of very different final products. The purchasing process can vary in several ways such as organization, power centers, competitive bidding and general purchasing policies. Buying criteria are used to judge competitors (example: lowest price, technical sophistication, delivery, or combination).

Apart from the mentioned classification, Dibb and Simkin (2009, s.9) present base variables of business markets:

- Business demographics (business, location, industry, sector, size...)
- Operating variables (technologies implemented, manner in which products are used...)
- Purchasing approach (purchasing policy, buying center structure...)
- Situational factors (size or order, context in which purchase is being made or urgency ...)
- Personal characteristics of the buyer (demographic , lifestyle, personality ...)

4.2.2. Effective Market Criteria

Market segmentation is useful and valid in the case of criteria of segmentation adequacy. This adequacy is formulated in five key criteria mentioned by Kotler , Keller (2006, 262p.).

- 1) Measurable: a segment is measurable and assessed from market potential with variables that are determined, for example size or purchase power
- 2) Substantial : a segment is sufficiently large, aim is to reach the largest possible homogenous group
- 3) Accessible : a segment has to be effectively reached and served
- 4) Differentiable: segments are distinguished by differences if they respond similarly to different marketing-mix elements.
- 5) Actionable : effective programs can be formulated for attracting and serving the segments

Dibb, Simkin (2009) also use the first three above mentioned points but their fourth point is Usefulness that describes existence of benefits provided by a segment. The fifth point is Stability of segments which should be guaranteed in short- and also long-term perspectives.

This approach is very important and it is described in many publications, even if the names of the main criteria are not the same, but the principle is similar. To see the similarities we can compare the previous criteria with ideal market segments criteria form Bělohlávek, Košťan, Šuler (2001, 642 p.)

- 1) Homogeneity – customers belonging to one segment should have same or similar reactions to the marketing mix
- 2) Heterogeneity - customers belonging to different segments should have different reactions at least to one variable of the marketing mix
- 3) Size – a segment should be big enough to be able to provide profit
- 4) Measurability – without the knowledge of size, no decision can be made without risk
- 5) Accessibility – a company should be able to operate in the chosen market segment

Even if all seven (five Kotlers , Kellers and additional two mentioned by Dibb, Simkin) criteria are fulfilled, it does not guarantee the effectiveness of segments.

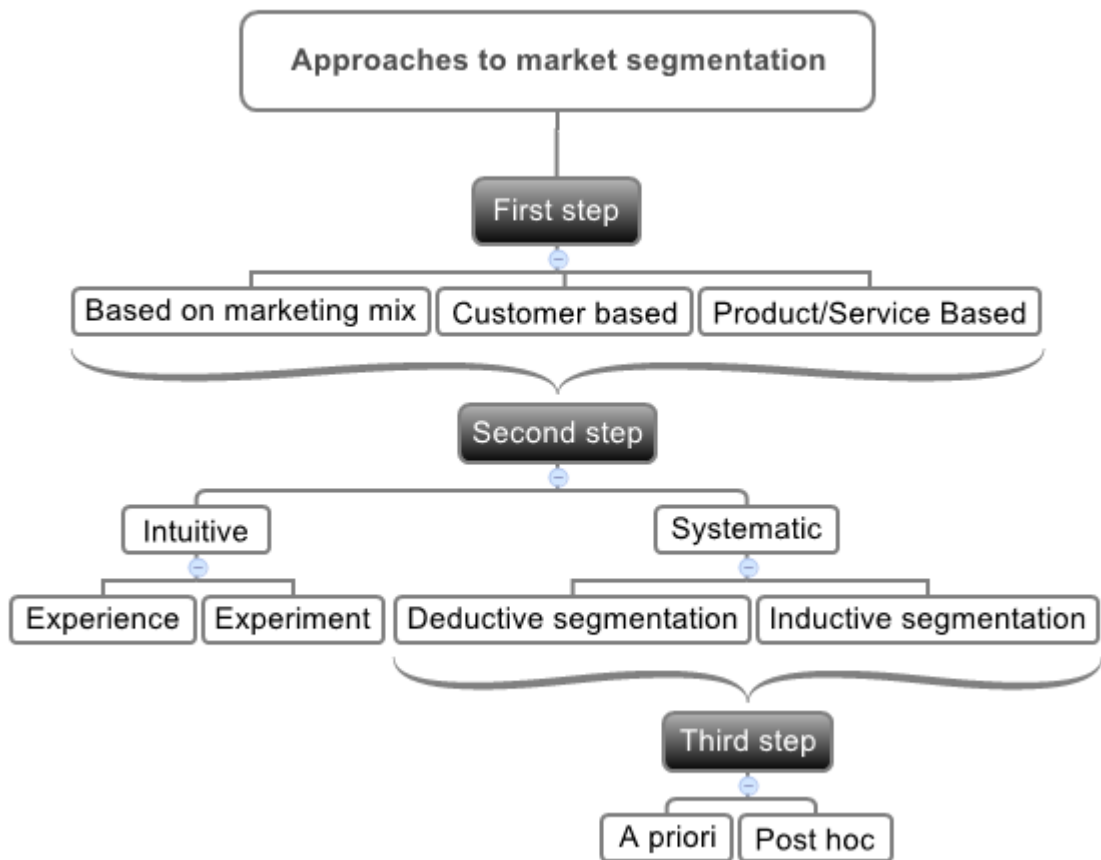
4.2.3. Approaches to Market Segmentation

The general process of segmentation is constant. However, several approaches may be applied in practice. Myers (1996) mentioned alternative approaches of segmentation based on customer segmentation and product/service segmentation, a priori versus post hoc segmentation. Dibb, Simkin (2009) see main directions of segmentation in an intuitive and systematic approach that are explained in greater depth. Both authors agree on alternative approaches of post hoc and a priori segmentation.

The author sees meaning in all classifications of the mentioned approaches. The author is convinced that no single approach will be used in practice and ideas from other approaches will be adopted. Usually, each approach has an alternative one to choose from. Decision-making should be based on logic

Figure 2 shows possible alternatives of market approaches in sequential steps.

Figure 2 Approaches to market segmentation



Source: Own source

First of all, marketers should decide whether they use segmentation based on the marketing mix, customer or product based approaches. The marketing mix is intertwined with segmentation but nowadays the trend is to segment rather than focus on the customer or product/service. Decision-making is influenced by the variables that are used in the process of segmentation. Customer based segmentation involves differences in characteristics of customers (demographic, needs...). Product/service based segmentation specifies physical features of products (benefits customers want from them, usage rates...). Marketers decided to which side they incline or whether they will combine both variables where one supports the other.

Marketers can base segmentation either on the intuitive or the systematic approach. The intuitive approach is often connected with qualitative studies and the systematic approach

is usually based on quantitative studies. This is not a strict rule, both the quantitative and qualitative research are involved in practical applications with regard to any existing schemes and operations of the company. Quantitative research is more costly and time consuming but the gained results are more precise and authoritative. This approach uses many different mathematical and statistical methods. Nevertheless, implementations have to be coherent with intuitive or managerial logic. The created models have to fulfill statistical, qualitative, and strategic criteria. A simpler and more intuitive solution is feasible through qualitative research. The qualitative approach is based on using elaborated interviews and group discussions.

The intuitive approach is based on intuition and „marketing instinct“. Relatively precise estimations can be made this way by experienced marketers or as a part of a marketing experiment.

The systematic approach specifies an endeavor of the overall inspection. It uses the majority of available resources and sees the segmentation from different points of view. It has an advantage over the intuitive approach in the information gathered. Two main directions of the systematic approach are characterized as deductive segmentation and inductive segmentation.

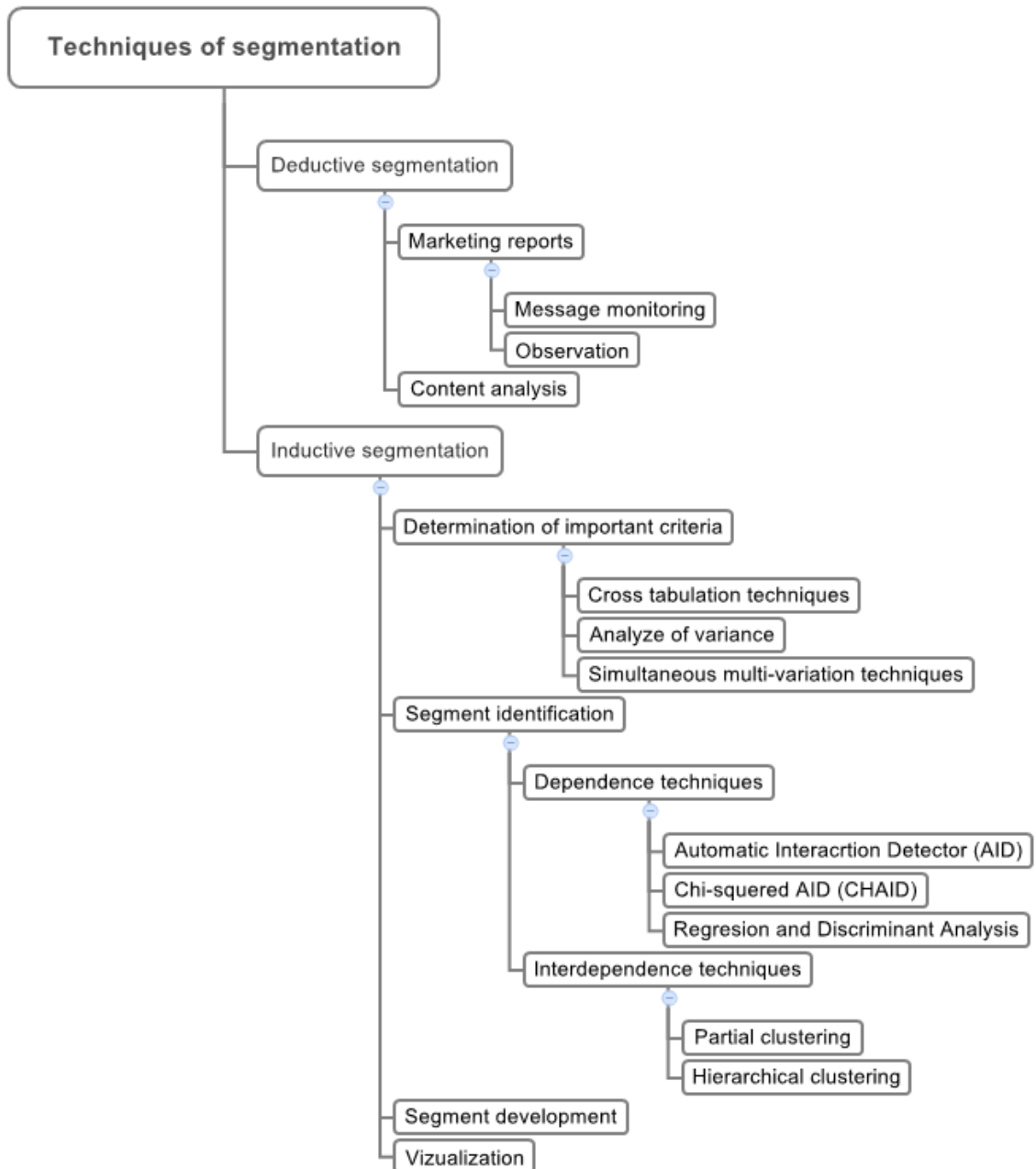
Deductive segmentation uses the segmentation knowledge of competitors and it takes into consideration the “general” knowledge and applies it to the needs of the company. In case the marketers “copy” market differentiation, they have to have a clear understanding of the company’s background. What are the subjects (if they are competitors, they offer complementary goods, or if they are distributors), what is their strategy or marketing mix, what are segments that they serve? Answers to these questions give them important information. They indicate which segmentation criteria are used. These criteria are tested by time and experience and they show which segments are already covered and which are not. Marketers create a new and more powerful market segmentation based on this information.

The inductive approach describes a situation where marketers investigate possible segmenting criteria to discern relevant market segments. Marketers differentiate a priori segmentation or post hoc segmentation based on the segmenting criteria.

A priori segmentation means that there is one particular segmenting criterion that distinguishes to which segment a customer belongs. The number of segments and factors are known or believed in advance. Post hoc segmentation systematically examines criteria relations. The number of segments and their selection is the result of the analysis.

4.2.4. Techniques of Market Segmentation

Figure 3 Techniques of segmentation



Source: Own source

The techniques used for the analysis and the interpretation reflects the approaches explained above. A method associated with the deductive segmentation is called a marketing report. Marketers keep professional journals and other papers that are published either in some paper form or on the internet. This information is unfortunately only the surface of the problem. Another technique is “simple” observation of competition and their usage of marketing tools, communication towards customers or business partners. The content analysis is a marketing technique that systematically analyses any message. This can be done by monitoring the appearance of an advertisement, publications on TV, internet, or magazines. This uncovers addressed segments. The limitation of this technique is that there can be insufficient or unclear messages sent by competitors. This approach is influenced by subjectivity during the classification of the messages. The content analysis is a technique of collection of all published data connected to the product and their analysis.

The techniques of the inductive approach serve the purpose of distinguishing techniques of data collection techniques and techniques of analysis (Koudelka, 2005). The data collection can use secondary data, which usually does not provide sufficiently specific information, or primary data that are more accurate but it is more expensive to gain them. This is a pre-step of the future analysis.

The techniques of the data analysis may precede in several steps that respond to the segmentation stages. The particular technique represents one stage or merges more of them. The first stage determines important criteria, the second step is identification, developing of these segments is the next step and visualization of segmentation helps understanding of the whole situation (Koudelka, 2005, 126 p.).

Marketers apply cross tabulation techniques, analyses of variance, or simultaneous multi-variation techniques (factor analysis) to determine the important criteria /base variables. The most used and the easiest procedure is the Cross tabulation. Associations and relations of variables are examined or contingency tables are used. The disadvantage of this technique is that the result of a pair comparison of several variables is chaotic and unclear for interpretation. However, this technique is convenient as a partial step for verifying the dependence of variables. When they are highly dependent, one of the variables can be omitted in the given set of criteria.

The identification of segments follows criteria identification. The techniques ramify into dependence techniques and interdependence techniques. The dependence technique is used where one dependence variable needs to be explained by independent variables. The Automatic Interaction Detection (AID) is a sequence technique that determine segments based on the determination of combinations of the first and second most important criteria and then gradually by the importance of criteria. A problem may occur when criteria needs to be ordered by their importance. The Chi-square AID method was developed for a practical calculation of AID.

The interdependence technique analyzes only independent variables. The cluster analysis searches for customers that are the most unified in their respond to the marketing mix according to given segmentation criteria. Two general strategic decisions have to be made. Which criteria will be used and how many segments will be uncovered? This problem is one of the most difficult parts of interpreting output when many possible cluster can be identified. A statistic finish and soft skills have to be involved at this point because the final judgment is based on balancing several factors. Myers (1996) discussed these factors:

- Statistical significance of differences between clusters
- Cluster size
- Sample size
- Meaningful cluster profiles on the basis variables used to form these segments
- Cluster decomposition
- The range of segments of possible interest to management
- Cluster profiles on demographic and other variable not used as basis variable

Number of basis variables? There is unfortunately a similar answer, it depends on the research that is made.

The partitioning clustering method is the most widely used method which tends to create clusters of roughly equal sizes. Partitioned clustering is a method in which customers within the group are more similar then the ones outside of the group that was created. It is based on the data set connected to entities and their recognition into a homogenous group. The method supposes that the actual number of clusters is known. The hierarchical clustering method starts by identifying individual pairs of customers in terms of the basis variables, similarity measures of all of the entities are made and pairs of the most similar ones are grouped. These groups are based on future similarity measures, then grouped

again until any meaningful segments are recognized. This method is sometimes used as a pre-step of partition clustering for identification of the number of clusters.

4.3. Targeting

The previous parts of this thesis describe how a company can identify market segment opportunities. As a second step, the company has to choose how many and which segments to target. This part already belongs to market targeting.

4.3.1. Targeting Strategies

The targeting strategy describes the options of a number of segments that a company can target. A company can tend to either a differentiated or an undifferentiated approach to the market. The basic options are as follows. The mass marketing strategy is an undifferentiated approach. In this case, one product or service is offered to customers across different market segments. This approach is used when a company does not feel differences in customers' needs. However, this pure form is not used in practice. The single-segment strategy is when a company focuses on only a single segment. This is based on the development of a single product or service that is carefully offered to specific customers. This specialization on one product can be risky in case that the segment will lose its economic power or the need for the product is dramatically changed. The multisegment strategy is the approach somewhere in-between. It targets different products or services to different segments. This approach is favorable for its risk spread among different segments. That is why it is widely adopted.

Kotler, Keller (2006, 262p.) extended these basic strategies and evaluated five different strategies. Each of the strategies is defined by the relations of a product and the market.

Single segment concentration occurs when a company focused on only one segment. It is specialized, has strong knowledge of the segment needs, achieves a strong market presence. If the company is a leader in that specific segment, they can earn a high return on investments. There is a threat that an existing company extends their operations and covers the segment or a new substitution product is created, a competition that can have bad influence on the previous company's earnings. That is the reason why many companies are focused on more segments. Whatever they do, they keep fixed costs and when being present in more segments, they can control the market power in a more flexible way.

Selective specialization is when a company selects usually the most profitable markets. The company operates at objectively the most attractive and appropriate markets, usually these segments are not consistent but provide a good protection against risk.

Product specialization means that a company produces a product which is sold at different market segments.

Market specialization occurs when a company concentrates on satisfying a particular market segment by providing many products which satisfy the needs of the customers of that specific segment.

Full market coverage happens when a company's aim is to serve the whole market. Only few large companies are able to successfully manage it and provide a large selection of products at all market segments. Undifferentiated marketing means that a firm ignores segment differences and operates on the market as a whole with only one offer. Differentiated marketing operates at different segments, where different products are designed for different segments.

From the perspective of risk, it seems that the more segments are covered the less risk there is. Differentiated marketing usually brings more sales but also more costs have to be considered, for example: product modification costs, manufacturing costs, administrative costs, inventory costs, and promotion costs.

Segment by segment invasion plans, updating segmentation schemes, and ethical choice of market targets have to be considered among all the costs mentioned above. Segment by segment invasion plans are created when a company plans to expand. A company creates a plan when and to which segments it is going to expand. The market is changing and that is the reason why marketing plans have to be updated and take into account the way how the company will continue to work in the future. Market targeting may create public controversy, usually when it is connected with vulnerable social groups such as children, pensioners or promoting potentially harmful products.

4.3.2. Selecting Segments to Target

The selection of segments is about choosing which specific market segments will the organization target. The decision should be made according to previous information about segments with the emphasis on segments attractiveness, business success, and the firm's

possibilities with regard to competition. Several basic questions have to be answered and considered. Does the company have enough resources to target the segment? How much will it cost? Does the company have any existing market shares? Is the company planning on any other production? Is there a possibility to use economies of scale? Does the company have sufficient product expertise, can it be developed? Is the segment big enough? What is the level of competition within the segment? What trends are affecting the behavior of the segment? What can negatively and/or positively affect the segment's potential? And the major question, which takes into consideration all above mentioned - What is the possible profitability of the segment? To sum it up, a company has a goal to maximize its profit and it is influenced by the market, competitive, economic, technological, and environmental factors.

Targeting can be done on the basis of the intuition of one marketer but a more systematic approach is recommended. The selection criteria needs to be chosen and set at the beginning because the selection criteria form the decision-making process later on. The selection criteria choice varies depending on future techniques that will be used, needs of the company base on an analysis and many other factors that have impact on the organization's assessment of the target market attractiveness. Dibb, Simkin (2009) present a list of them. It includes knowledge about the existing market share and market homogeneity; existing product expertise on which the organization can build on; likelihood of production and marketing scale economies; customer needs, size, structure, and growth of segments; corporate resources. The nature of the competitive environment influences also decision-making processes. An attractive segment can be served by very strong competitors so it would not be hard to reach a high profit there. The marketing environment and market trend influences and forces represent threats and/or opportunities when marketers are able to work with them.

The selection criteria derived from the factors mentioned above have to be in balance, profitability does not have to be the most valuable, the attractiveness criterion is very important. "Baskets" of criteria are considered in practice. Some criteria are more important than others, so there needs to be a process for weighting the selected attractiveness criteria, for those various models that were created.

Examples of the most common attractiveness criteria: Profitability, market growth, market size, likely customer satisfaction, sales volume, likelihood of sustainable differential

advantage, customers price sensitivity, stability of the market, barriers to entry, supplier power, threats of substitutes...

An important consideration has not been included yet, which is time perspective. The business practices and plans are commonly done quarterly or for each year separately in Europe. Companies are focused on short-termism, the importance of reporting increases current profitability. However, managers have to undertake responsibility also for future gains. There should be a balanced basket of attractiveness criteria that includes a mix of both short- and long-term issues, inward-looking and outward-facing.

4.3.3. Targeting Selection Tools

Targeting selection tools build on the attractiveness criteria explained above. Measures of segment attractiveness have been developed. For example, Directional policy matrix (DPM), the ABC sales contribution analysis, and the segment evaluation matrix (SEM)

Directional Policy Matrix (DPM)

DPM is known also as the market attractiveness-business strength model. DPM employs multiple measurement and observations, it enables a basket of variables to be considered and acknowledges the varying impact, and also it evaluates the relative merits of different product, brands or market segments. The usage described below focuses on targeting the most suitable segments.

Marketers select unique sets of variables. There are two categories; each category is associated to one axes of the matrix. The vertical dimension represents market attractiveness, it includes aspects related to the market, such as expected profitability, seasonality, economies of scale, availability to develop competitive advantage, industry sales... The horizontal axes represents business strength, for example, relative market share, price competitiveness, product quality and technical experience, financial resources, managerial expertise... These are internal issues unique to the organization. Score and value is given for each attractiveness criterion. Ranking is computed from that. The ranking of attractiveness criteria are numbered in the category of horizontal axis and vertical axis. Thus each one number occurs. These numbers are used for positioning on the targeting map. This procedure has to be done for each segment. An example of the calculation of one segment is shown in the Table 1 and it is graphically expressed in the figure 4 below.

Table 1 DPM example

Vertical dimension (market attractiveness criteria)				Horizontal dimension (business strength criteria)			
	Score	Weighting	Ranking		Score	Weighting	Ranking
Market size	0.5	25.0	12.5	Relative market share	1.0	50.0	50.0
Expected profitability	0.0	10.0	0.0	Price competitiveness	0.5	10.0	5.0
Seasonality	1.0	40.0	40.0	Product quality	0.0	40.0	0.0
Economies of scale	1.0	25.0	25.0				
total		100	77.5			100.0	55.0

Source: Own source

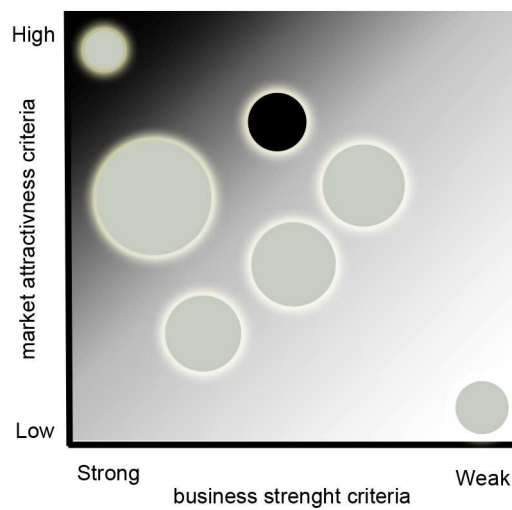


Figure 4 DPM example

Source: Own source

The purpose of the model is to highlight the most attractive segment and avoid wasting. The best situation for the company is when the segment is placed in the upper left corner. If the computed segment is colored black, the situation is good in comparison to other segments.

There are several main stages of the process in practice(Dibb, Simkin, 2009, 187 p.). The first one identifies the mix of personnel that is going to participate in the selection of criteria. A debate and a workshop follow in order to create a balanced set of criteria. Each of the participants determines variable values, averages of all input are made. The next stage is to plot the result on the DPM.

The ABC sales Contribution analysis

The ABC analysis focuses on the current situation. It is a simple but effective way how to show both the level of sales and the financial worth of these sales of the organization. It is an analysis of sales versus the financial contribution. The ABC analysis is used as a supportive tool because it takes into account only the financial side.

Segment Evaluation Matrix (SEM)

The SEM is used for helping to choose between different segmentation approaches and makes appropriate targeting decisions. The SEM prioritizes market segments in sale values and marketing activities. Some similarities between the SEM and the DPM can be seen in two main dimensions in which marketers operate. However, SEM uses the segment qualification and the segment attractiveness. The segment qualification criteria describe if a segment can be served effectively within their own marketing mix. Examples include: the segment should have common user needs and characteristics, characteristics of the segment should be measurable, each segment should be served by a similar distributional channel... Segment attractiveness criteria were already discussed, they describe what best fits to a company goal. For example, the segment size, segment growth, profitability, price sensitivity, regulatory influences, and barriers to entry...

The SEM creation process starts with criteria selection where emphasis has to be put to the sensitive and balanced choices. A decision on the relative importance of each criterion set has to be made, using value and score rankings in the calculation. Ranking of each segment is entered into the matrix. Each quarter of the matrix has specific characteristics tied to the segment that is placed there. These characteristics slightly change with each studied situation, whether it is showing an existing product in a current segmentation scheme, an existing product in a new segmentation scheme, a new product in a current segmentation scheme, or a new product in a new segmentation scheme. Marketers can compare relative

segment positions or placing in the matrix. Example of the interpretation of the matrix (Dibb, Simkin, 2009, 124 p.)

Figure 5 SEM example

Segment qualifying	High	<ul style="list-style-type: none"> - Easy to enter - Highly competitive - Low entry barriers (potentially very lucrative) 	<ul style="list-style-type: none"> - Easy to enter - May not be attractive in long term - Useful use of spare capacity
	Low	<ul style="list-style-type: none"> - Difficult to enter - Potentially attractive - High entry costs - Long term opportunities worth investing in - Seek scale economies 	<ul style="list-style-type: none"> - Difficult to enter - Avoid investments - Operation costs may not be justified - Consider resegmentation
		High	Low
		Segment attractiveness	

Source: Dibb, Simkin, 2009, 124p.

4.4. Positioning

Because positioning works with customer perception about the product, companies have to know or focus on their customer perception. It differentiates a company's product from other competing firms in the market place. Targeting finds suitable segments and positioning operates within the segments.

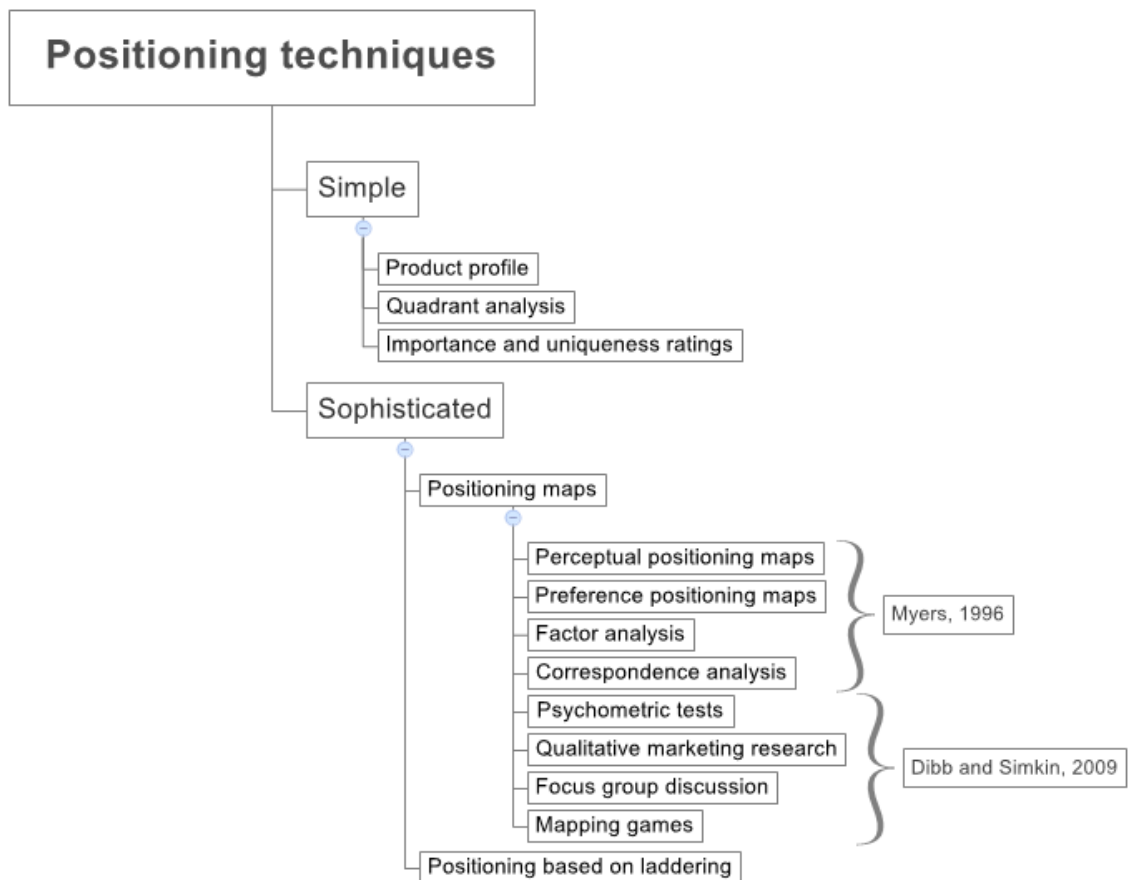
As was mentioned before, positioning is about consumer perception. The background for their understanding of a product is determined by the competitive structure of markets. Marketers distinguish three simple levels: product superiority, product differentiation, and product parity (Myers, 1996). The best situation occurs when a product is superior and "has no competition".

Effective positioning is not just about superiority, that is a rare situation. Mayers (1996) defined several requirements. Uniqueness is the most basic principle: a product is different

in some way from all of the competitors' products. This unique thing needs to be somehow important to customers. When the difference is insignificant it does not have any influence on customers. The third requirement has to do with believability of promotion. Any claims that are connected to the product must be credible. Customers must believe it and they do when the claim is reasonable and true.

4.4.1. Positioning Techniques

Figure 6 Positioning techniques

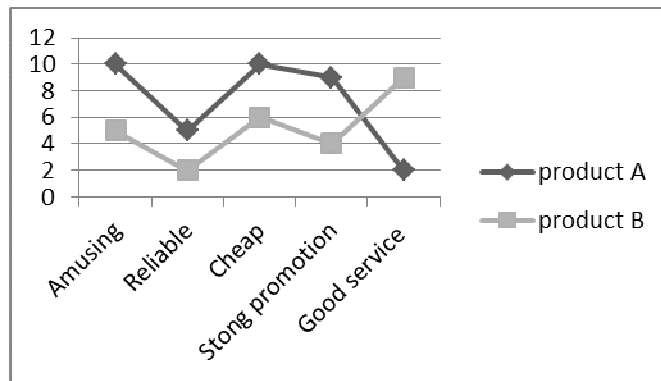


Source: Own source

The knowledge of customer perception is essential for positioning. Several different techniques are used form very basic ones to extremely sophisticated ones. Position techniques are shown at Figure 6.

A product profile belongs to the simpler techniques. Simple graphs are based on average ratings given by basic questionnaires that represents given characteristics of a product. In this case, only descriptive and perceived performance ratings are used. Problem occurs because there are no comparison and importance rating of the product. Example of profiles of two products represents the Figure 7.

Figure 7 Positioning profiles



Source: Own source

The quadrant analysis is based on surveys that ask to rate importance of attributes and performance of several companies. The performance of each attribute is laid out on the horizontal axis and the importance of the attribute on the vertical axis. Each of these plots can be divided into quadrants which represent particular situations of the company, then the attributes are put into it.

Importance and uniqueness rating is a simple research; the output is made up of the consumer ratings of attributes' importance and the uniqueness of the product. The previous technique does not distinguish between all competing products. And also graphical visualization is made.

For visualization, summarization, and clearer image of the perception, marketers use positioning maps which belong to the more sophisticated techniques. This technique is based on mathematical and subjective approaches designed to summarize customer perception into a map. Customer researches which identify dimensions for mapping represented by axes of the map plays a key role. They are important marketing mix

requirements. Products are placed into two dimensional spaces. These spaces are defined in terms of attributes that identify either location in the space or axes of the map.

Positioning maps are sometimes wrongly called Perceptual maps. A positioning map is only an arch over all of the approaches and techniques. Perceptual maps are the most used type of positioning maps. The techniques that are used for perceptual maps are multidimensional scaling and discriminant analysis (Myers 1996). Myers (1996) split positioning maps into two main categories: perceptual maps and preference maps. Some other techniques include the factor analysis and the correspondence analysis. Even if the outputs of these techniques have a similar format, the interpretation of the maps is different according to the way the positioning spaces were constructed.

The most popular techniques which are connected to positioning maps and which are published in Dibb and Simkin (2009) are:

1. Psychometric tests using quantitative scoring in semantic scales
2. Qualitative marketing research, typically in the form of focus group discussion
3. Participants in a focus group discussion depicting the relative positioning on a flipchart of prepared board, and selection the essential variables for the axes
4. Perceptual mapping games

Laddering techniques are not positioning map techniques. “*This positioning strategy in this context is based on the translation of an attributes into the personally relevant reason why it is important to the consumer*”(Myers, 1996, 363p.). It is based on the mean-end theory where its purpose is to represent connections between products and a customers.

This is just a short outline of techniques, many techniques have been developed since then. The creation of positional maps is nowadays supported by software and it is not possible to name all of them or to explained them in depth due to the whole concept and extension of the diploma thesis.

4.5. Business Market

What is the difference between business customers and consumers? Business customers are understood as participants in the business-to-business (B2B) market. Is there any difference in the segmentation processes? This question occurs when business markets are segmenting. The publications focused on such topics are usually focused on the

segmentation of consumers and the segmentation of business customers is mentioned only partially. The foundation of the segmentation processes is for both the same; differences are determined by differences between business customers and consumers.

The explanation of the differences introduces essential characteristics of the business market that are enormously important. Understanding these is a part of any market segmentation, understanding customers is the first step to satisfying them thus reaching the goal of the organization.

Understanding involves appreciation of the characteristics and profilation of the targeted consumers; Key Customer Values, which describe buying needs and requirements; consumer feeling about the product; the composition of the buying center; buying decision process, and influencing factors.

What are distinctive characteristic of business market? Business customers emphasize on economic benefits (consumers emphasize on psychological benefits). Usually more people are involved in the formal decision process and there is no rule stating that those that make the decisions are then directly involved with the product or service. Moreover, there is a place for price negotiation. The number of business customers is smaller. However, they are big players; consumers are counted in different scales. Even if the buying process is is formal and is influenced by many policies, there is a place for personal settings, interpersonal relationships, and intuition. The purchase is more often made directly from suppliers. The reasons for it can be that they buy large quantities and any intermediary would be too expensive; suppliers may satisfy specific business needs and provide customized products or packages. The purchase itself is often more risky then consumer purchases. The reason for that is the higher value of the products, long term contracts, complicated purchase processes, issues connected to changes suppliers ... Business markets may be characterized by geographic orientation. Demand is derived from the demand in the consumer market, thus consumers indirectly influence the whole business market.

The typical buying decision process is broken down into several follow-up stages(Dibb, Simkin, 2009, 58p.): need recognition, development of product and supplier satisfaction, search for products and suppliers, evaluation of products relative to specifications, selection and ordering of suitable product and supplier performance. This typical process happens in different variations but basically the same in all B2B relations. However,

marketers should have a concrete image of their buying process. The decision process is formed by many influences (Dibb, Simkin, 2009, 62p.): environmental (economic conditions, political, legal and regulatory issues, social trends, competitive forces), organizational (purchasing policies, buying objectives, available resources) interpersonal (cooperation, conflict and power relationship within the buying center), individual (age, gender, education, job status, personality)

Business buyers seek different benefits; it depends on their stage in the purchase decision process (Kotler, Keller, 2006, 261p.). Each of the process also requires different channel preferences. First-time prospects are customers who are inexperienced, they have not purchased anything yet so they need somebody who understands the business to help them, someone they can trust. They prefer personal contact with a salesperson instead of a catalogue or on-line purchasing. The more experience customers have, the more they know what they want they are focused on buying and are more open to electronic channels that support short time delivery. Novices are customers who already started their business but they need easy-to-read manuals, hotlines, and knowledgeable business sale representatives. Sophisticates are customers who are experienced. They want speed maintenance and repair benefits, product customization and high professional support.

Other classification is based on the type of selling. A segmentation scheme that classifies buyers into three groups and is based on various types of selling (Kotler, Keller, 2006, 260 p.).

Price oriented customers (transactional selling) - prefer the lowest price

Solution oriented customers (consultative selling) - they value more benefits and advice

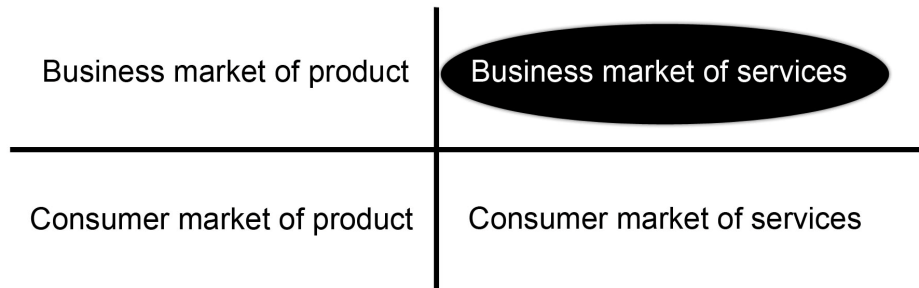
Strategic value customers (enterprise selling) – they value co-investing and participating in the customers' business

4.6. Service Market

As the business market has a particular characteristic, the same applies for the market of services. The market can be characterized in terms of markets (business and consumer) and products (product and service). The recruitment service market is characterized as an industrial market of services (Kincl, 2004, 176 p.) in other words a B2B service. There are also companies which operate on markets which do not fit to the concrete distribution.

Material products can be provided with services or vice versa. The supply of a recruitment agency is pure service as the Figure 8 below indicates.

Figure 8 Markets



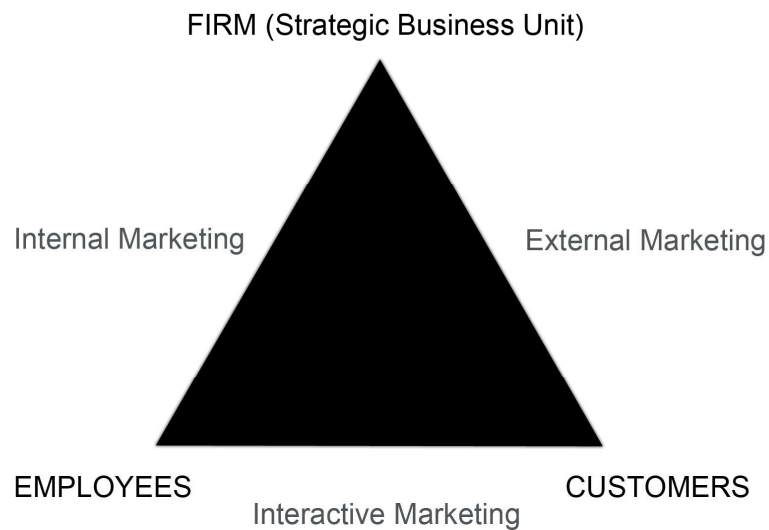
Source: Kincl, 2004

Marketing connected to services is influenced by many characteristics that are different forms of material products. It is immateriality, inseparability, variability, transience and the inability to hold service (Kincl, 2004, 114 p.).

When services are immaterial, they cannot be inspected and they cannot be touched or viewed. That is the reason why customers usually look for a guarantee or any evidence of quality to reduce uncertainty and help them in choosing between competitive offers. They are characterized as inseparable because they are usually produced and consumed at the same time. The production process of services is usually important for customers because they are involved in it, on the contrary of the production of material goods. Variability of services means that they are anomalous from the settled norm due to dependence on whom, when, and where they are provided or they are customized for a specific request. It was already mentioned that services are produced and consumed at the same time so any holding in storage is not possible. They usually cannot be used later on or put to stock. Ownership of services is usually limited according to the specific use of the services.

The service marketing triangle plays (Figure 9) an important role in the marketing strategic decision process and an understanding role of marketing in the services of companies. It represents the fact that a company is not the only player.

Figure 9 The service marketing triangle



Source: Kincl, 2004

The corners of the triangle represent major participants, that is the firm (strategic business unit), employees (the real service delivery person), and customers. There are three major types of marketing that are connected to always two participants: Internal, External, and Interactive marketing. Only a well-balanced connection of the three types of marketing mentioned above guarantee successful services.

External marketing is used to make promises. A company makes and communicates promises to customers about the expectations, quality or the way of delivery of a service. Traditional ways include promotion, advertising, sales promotion and price creation. But external marketing is just the beginning. Interactive marketing should keep the promises given. The employees deliver the services so they are the major elements that influence if the promises are kept or not as well as customers satisfaction. Internal marketing is connected to the allowance of the promises. Employees have to be skilled to be able to deliver the services, to be motivated, and they have to have appropriate tools to do it.

Even the marketing mix of services has its own specifics. The original 4Ps of marketing were extended. The most common variants are (Kincl, 2004, 121 p.):

- Product, price, place, promotion, physical evidence, people, process
- Product, price, place, promotion, physical evidence, people, process, productivity and quality

- Product, price, place, promotion, programming, people, process, partnership

As was mentioned above, services have its own characteristics. These characteristics influence the marketing mix (Kincl, 2004, 121 p.):

- Product is usually a process, services are immaterial, determining factor is quality
- Prices are relevant factors because it plays an important role in the customer's decision-making process. The higher the price the higher the expectation about the quality of the services. It is very important to set up relevant prices.
- Distribution canals are usually short because services cannot be held in stock and it is usually connected to specific locations so that makes it harder to deliver.
- People who are playing any roles in a marketing process influence it by their own approach and personality.
- Processes require division of a process into logical steps. The process can be perceived from the diversity and/or complexity point of view. Janečková, Vašítková in Kincl (2004, 126 p.) define tree operational systems. Mass services are characterized by low personal interaction, high standardization, and high possibility to replace labor by mechanization. Custom services allow high rate of customization. Professional services are provided by specialist; these services are usually nonrenewable and need high customer involvement.
- Physical evidence includes places where the services are provided or produced, and any material that is used during the process of producing or that is needed for the services. All the previously mentioned needs to be adjusted to the specifications of the provided services and to the customers.

5. Practical Part

5.1. Introduction

The aim of this part of the thesis is to uncover market segments of ICT companies for the purpose of personnel agencies. This influences directly the determination of segmentation variables and the development of clusters.

The companies pride themselves with their advanced customer care and services which can be easily true due to their professionalism, flexibility and creativity to work. However, to serve and address companies with diametrical needs is inefficient and worth to lots of effort that can be invested into new customers. Targeting should improve the current situation with is not bad but can be better.

Because segmentation has many levels, it is a question whether ICT companies already belong to one meaningful segment or not. The definition of a segment says that all members of a particular segment respond to a particular marketing mix. ICT companies do not respond to a same marketing mix so it is meaningful to segment ICT companies. The next question is weather the chosen methods are right and weather the uncovered segments fulfill effective segmentation criteria. The appropriate segment variables have to be chosen in order to be able to uncover new segments. Data has to be collected for the following analysis.

The first step is to run a cluster analysis on ICT companies in the SPSS program. The output of the cluster analysis uncovers a few segments based on the quantitative variables which are the number of employees, turnover, number of premises and economic classification. The reason for the analysis is to get basic information of the segments and ensure that the segments are sufficiently large.

The second step is to develop the uncovered segments. The customer profile is defined by the needs of customers, decision making process and influences. The definitions of the segments are based on group discussions where the experience of professionals is applied. Moreover, the criteria of attractiveness and the segment qualification criteria will be determined for each segment and then it will be used for the Segment evaluation matrix

which helps with the evaluation of the segments and provides data for the targeting decisions.

A recommendation, which is based on the performed analysis, is made for the P&E company.

5.2. The ICT Sector

The ICT sector is going to be segmented because there is perception that most of the ICT specialists (main interest of the selected company) work in the sector. It is important to understand the segment and to know main characteristics related to personnel agencies for the segmentation and definition of segment variables.

The dynamic development of the ICT sector reflects growing influence of ICT technologies on modern economy. The development of ICT modifies processing of information which enables work with larger data and easier access to them. Communication is much easier and faster nowadays. It also influences activities that are not directly connected with information and communication technologies, for example manufacturing, distribution, management, marketing or purchasing. These activities are parts of all business activities.

The Sector of Information and Communication Technologies became also one of the most important sectors in the Czech Republic. It creates a turnover that makes 5.1 percent of the total turnover in the business enterprise sector in the Czech Republic. It employs 2.7 percent of all employed people in the Czech Republic and 53 percent from that is for ICT services (Skarlandtová, 2011).

The ICT sector is defined by CZ-NACE (Czech Industrial Classification of Economic Activities). The ICT sector is sectioned into four main groups. ICT manufacturing (CZ-NACE: 26.1, 26.2, 26.3, 26.4, 26.8), ICT trade (CZ-NACE: 46.5), Telecommunication (CZ-NACE: 61), and IT services (CZ-NACE: 58.2, 63.1, 95) (Skarlandtová, 2011).

The ICT sector employed 141 003 people in the year 2009. This number is continuously increasing, it increased from 135 847 in the year 2005 (Skarlandtová, 2011). The absolute numbers are rising as well as the relative share of total employment in the Czech Republic. It was 2.5 in the year 2005 and 2.7 in the year 2009. The highest share of 53 percent of employed people work in the IT service industry (Skarlandtová, 2011). The IT service

industry is the only one where the number of employed people is rising, the other numbers are slowly decreasing in other sectors of the ICT industry. IT services include activities connected with programming and related activities, data processing and data hosting, and computer repairs.

In terms of segmentation, it is interesting that 42 percent of total employed people are working for companies that have 250 or more employees (the biggest companies according to classification of Czech statistical office) and the second highest percentage is 38 percent for companies with 0-49 employees (Skarlandtová, 2011). This share is constant from the year 2005 which suggests that some stability in this distribution. Another interesting point is that there is only 70 of the biggest companies that employ the 42 percent compared to the 31 207 enterprises in the ICT sector that employ the rest 58 percent.

The turnover in the ICT sector was 626 326 mil CZK in the year 2009 which makes 6.1 percent of the total turnover in the business enterprise sector. ICT services create only 26 percent of the turnover and 64 percent are created by the companies with 250 or more employees (Skarlandtová, 2011).

Some interesting points can be seen from the perspective of ICT specialists because the ICT sector does not employ only ICT specialists but also needs positions of different professions. There is 114.2 thousand ICT specialists working in the Czech Republic which was 2.3 percent of the total employment in the year 2009. Their average gross monthly wage is 43 952 CZK compared to 27 825 CZK of the rest. From an examination of data from the Czech statistical office, the highest wages are in Prague and also the highest wages are paid in the companies with 250 to 999 employees (Skarlandtová, 2011). The positive impact on employment is above-average wages. This influence of demand for ICT jobs allows choosing the most appropriate employees. The second point of view is that personnel agency charges are derived from the commencing salaries.

According to the data from the Czech statistical office the biggest share of IT specialists are male from 25 to 35 years old (Skarlandtová, 2011). These people are willing to invest and build their careers. They are not afraid of learning and changing their jobs, so they are good clients.

Interestingly enough, the structure of the ICT work force as individual roles shows that a high percentage of IT dealers work across the ICT sector.

The rising numbers of employees in the ICT sector is a positive indicator for the personnel agencies focused on ICT professionals. Moreover, both absolute and relative numbers of IT specialist are rising.

The web page budoucnostprofesi.cz was created by a team from the National Observatory of Employment and Training which is focused on labor market issues, especially the competitiveness and human resources, forecasting skill needs and training issues. According to their IT service sector analysis, the reason why the sector has undergone a very dynamic development (turnover grew annually by 12-26%, ie on average three times faster than the GDP of the economy and increase in the period 2000-2007 amounted to about 20%) in the past 15 years is thanks to low costs, plenty of skilled workers and investment incentives (Národní observatoř zaměstnanosti a vzdělávání, 2011). The ICT service employment growth was associated with higher demand for more technical careers (programmer, tester, IT technician) as well as in other sectors of the Czech economy, while the demand for analysts and IT executives rose more gradually.

ICT professions are characterized by a high proportion of university educated workforce. However, according to www.budoucnostprofesi.cz (Národní observatoř zaměstnanosti a vzdělávání, 2011) there are skill gaps between what companies really need and what schools perceive as trends in the demand. The future demand for occupations in the ICT services will be affected very differently than the demand of today's trends. What is likely to persist is an excess of demand over the supply of labor. As in other sectors, the labor cost will gradually converge with Western Europe and the cost advantage will gradually disappear. That could mean a significant problem. Unless a corresponding rise in productivity and quality of graduates appears, especially their language skills and soft skills which are still perceived as a clear weakness in the ICT labor market in international comparison. That is why the CR will focus on key products and services with higher added value - especially in the field of development and trade.

The main factors which will affect ICT services and professions in the coming years include(Národní observatoř zaměstnanosti a vzdělávání, 2011):

- Technological and market modification - tools for new applications are going to be simpler, number of specific solutions will decrease so demand for purely technical oriented professions will fall.

- Cost changes - some occupations with relatively low added value (programming, testing) may be lost and progressively squeezed out of the Czech labor market. The Czech ICT market will also be increasingly exposed to fluctuations in the global economy, previously mentioned difference in wage levels will be reduced.
- Changes in sourcing business model - the expected cost development will force the Czech companies to provide services on-site (the client) in other countries. The current ICT centers in the CR may maintain the development of a functional and technical design, but programming will be implemented in a more cost-effective locations.
- Changes in the investment policy of global companies - The demographic and cost reasons decrease the attractiveness of the CR in terms of localization of major outsourcing centers of the investment support services type. But a great opportunity for the CR is the large German market, where it can compete with German language skills (although this is the Czech ICT workers who are not sufficient)
- Changes in the structure of ICT companies – particularly medium-sized ICT firms will be in danger; their competitiveness will be reduced thus worsening the access to the outflow of customers and quality employees to global players. On the contrary, very small businesses and individuals can benefit from new trends in software development and appropriate support
- Growth requirements for ICT ergonomics - demands for greater convenience, intuitiveness and safety of these technologies will increase with the growing number of ICT users,
- The increasing penetration of ICT into other sectors – software will be an increasing component of the functionality of products.
- The growth in importance of trade and business professionals – the factor for the competitiveness of "customer facing" and people-oriented "information design and management" is increasingly important in some segments, such as telecommunications,

5.3. Project & Engineering s.r.o, the Selected Company

Project & Engineering s.r.o (P&E) is a small consultancy company with its residency in Prague. The company specializes in solutions and services in information technology and search for resources across branches (human resources, financing, consulting and advisory

services, marketing, business development). The particular division, which the thesis is about, works as a personnel agency focused on ICT specialists. The division works independently under the name Personnel & Engineering. This company specializes on direct search based on contacts that were built in 15 years of existence on the market.

5.3.1. Mission and Vision of the Selected Company

“We do the small thing” is the catch phrase of Project & Engineering. It represents the idea that even if the recruitment process is complicated it is only a small part of the actual business. The company does this small thing for you, helps you with this complicated process and makes it easier, and you can focus on your business. P&E is not a "typical" personnel agency, the work is mostly based on personal contact. The company has built over 15 years of experience in the ICT market and it is still systematically extending. Because there is not just the recruitment department but also the IT development department, it does know ICT and they know the structure of the key ICT companies and IT departments of large customers. They are aware of how they work and what they need.

On the basis of personal contact with a candidate, a real knowledge, his achievements, experiences, and ambitions they can find a small number of suitable candidates that are presented to the searching company. The demanding company is not then overwhelmed with irrelevant curriculum vitae. They work with candidates who are available in the labor market.

They know that the best candidate can be a top specialist in one situation who will immediately bring a competitive advantage, in another situation the best candidate is somebody who will accept the company conditions and become gradually built as a full-fledged member of the team. Therefore, they always want to know the strategy of the searching firms, specific requirements and understand their corporate culture. The selection process consists of proving hard skills but also soft skills. How to fulfill specific requirements of different requirements of customers? It is openness and flexibility that is integral part of their approach.

Mission: Taking part in the clients success by building a lasting partnership in which the Personnel & Engineering is the partner who is prepared to understand their needs and deliver quality solutions quickly and with measurable results(Project &Engineering, 2011).

Vision: The vision is to become the most popular company that is recognized by long-term partnerships and high standard services. The aim is to contribute to client's building of professional and executive teams, to ensure an effective way to achieve their goals(Project &Engineering, 2011).

The P&E does not have the ambition to become the leader in the market of personnel agencies; they just want satisfied partners.

Values: Appreciation by the customer has been reached by taking care of them well, their needs and interests are at the heart of everything Personnel and Engineering do (Project &Engineering, 2011).

- Interest - to understand the needs of each client is the alpha and omega because this leads to a long-term partnership.
- Reliability - ethics and trustfulness is a matter of course
- Access - a satisfied customer is the most important measure of our work done.
- Quality - a well done job is a common standard

5.3.2. The Internal Processes of the Company

Describing the fundamental process in the company is challenging because there is no straight product line. In real life, there are several open positions and a mass of candidates that are treated. On one side, there are demanding companies searching for employees that sign contracts with P&E. These contracts control basic conditions. The demanding company welcomes that P&E does not require an exclusive contract, commission is based on success and the service usually comes with a 6 month guaranty. P&E visits the client to get to know the client and to clarify the expectations in case the client is new. Then P&E searches in its internal database as well as any external databases like Jobs.cz and actively searches for candidates and also puts the offers on the P&E website. When the candidates are found, they are personally tested for hard and soft skills and expectations are clarified on both sides. In case the candidate fits the requirements, he or she is forwarded to the demanding company for a final selection process. P&E gets paid when the chosen candidate is hired.

This seems like a simple process. In case that P&E finds several candidates with a specific profession, only one is usually suitable for the demanded company and so the process is reversed. P&E can approach companies with the offer of capable potential employees (candidates that are qualified but they have not been chosen yet). Addressing these companies is based on contacts and knowledge of the IT companies. The reason why it is done is to capitalize on already invested effort of finding and testing candidates. The fact that usually more positions are opened at the same time has to be acknowledged. One company searches for several open positions at a time. Similar positions may be duplicated across companies. The last case is very convenient because it refers to search in the same pool of candidates.

P&E always finds a place for negotiation with clients because they are flexible and creative. However, the price limits are always set.

As it is clear from the text above, the P&E strategy is unique and based on socialization within the ICT sector and the emphasis on customer satisfaction, not low cost prices.

The last question is who are customers. The answer is simple now. Any company which searches for ICT specialists operating on the Czech market. Today, P&E actively cooperates with 15 companies of different sizes and focuses (software companies, banks, telco companies, wholesale of candies...)

It is also relevant to explain that ICT specialists are understood as employees with an experience in their field. No special definition is needed because for example IT managers can be perceived as ICT specialist or rather managers?

Weakenesses of P&E:

- P&E is a small department (tree employees) with limited (especially human) resources
- Unsystematic work which affects long cooperation (current cooperation is based on personal contacts), lack of older data, thus objectivity.
- Insufficient presentation on the internet (SEO of their website). Especially IT professionals use internet to search for jobs.

Strengths of P&E:

- Long-term experience in HR and in the environment of ICT companies
- High standard of work, creativity and flexibility that accompanies it
- Terms of provided contracts
- Space for negotiation

5.3.3. Competition

Lets simplify it and say that P&E is a regular personnel agency. A trend can be noticed in the rising number of personnel agencies, the number of agencies rose from 372 in 2002 to 629 in 2007, which is 1.7 times more(Kupka, 2011). The number of agency employees in the same period also grew significantly, more than 5 times as much (Kupka, 2011). There were global economic changes in the year 2008 and also a new classification of economic activities was accepted. Unfortunately, since then the data are not fully comparable. However, the decrease in real numbers is significant. It can be demonstrated in the decrease of the number of placed employees but also in agency revenues that have fallen during it by half (Kupka, 2011).

These numbers include all companies that search for job for individuals, place individuals into demanding companies and provide consultancy services for job opportunities.

Job portals like Jobs.cz or monster.com are common sources of open positions and candidates. They help with searching for more common jobs. The advantage of these agencies is their accessibility because they are run on the internet with huge numbers of items in the database and they are relatively cheap. The disadvantage of them is that they do not search actively for new possible candidates and do not make preselections for demanding companies. Some job portals have a specialization, for example they are focused on some geographical area or they focus on a particular industry. For example, there is www.pracevit.cz, www.ictjobs.cz for IT jobs and many others that provide similar services.

New sources of information about people and careers are social networks, especially linkedin.com and Twitter. It is possible to search for professionals who are not actively searching for job, see connections and previous experience, and also promote open positions. I would classify these social networks more like an indirect type of competition because it still serves more like a source of information than a personnel agency in the Czech republic. LinkedIn is not customized for the Czech Republic and thus many people

are not able to use it actively. However, it is a reliable source of candidates, especially for managers and ICT specialists.

A wide range of personnel agencies are operating on the market, from small local agencies with limited portfolios of services to large international companies with long lists of services they provide. They usually provide recruitment, search and selection of employees, recruitment processes, outsourcing, recruitment advertising, consultancy services, payroll services and many others. Example of these personnel agencies are Grafton recruitment s.r.o. or Menpover spol. s.r.o. , PERSPEKTIVA[®] CZ, s.r.o. can be named as one of the companies focusing on the IT industry. They are searching for all types of employees; the most common are for middle and upper management. An advantage of personal agencies is that they are still not very expensive even though they offer professional services. Their disadvantages are connected with communication and clarity of company goals, and others connected with any services that are outsourcing. Most of the personnel or staffing agencies are general in the Czech Republic; they do not specialize on specific positions. Many specialized personnel agencies exist in the Western Europe, for example for nursery services of for scientific staff (The Benefits of a Specialized Recruitment Agency). Maybe this is a way where the Czech market is going to develop and smaller specialized agencies will be able to find a place on the market.

Headhunting is used for recruitment of top managers and very specific professions. It is usually expensive but necessary in case a company needs to fill a position in top management and does not have internal resources.

Local newspapers play a significant role in regions. The Czech Republic is known for a generally small willingness to travel to work so it is easier to search in local media. Unemployment is higher in specific regions than in the capital city so the unemployed are searching for a new job more actively, and companies do not have a problem to find employees. On the other hand, they have to settle for an employee with lower skills, because skilled IT specialist already went to bigger cities for in order to get higher salaries.

Recommendation is a common way how to find reliable employees. It is usually very cheap, based on personal contact and proceeds in an informal way. Some companies have inner programs that in case current employees recommend somebody who is then hired, he gets a provision.

Any company has to notify the Labor office about any open positions. These Labor offices are huge sources of information about open positions and people can actively approach companies that are searching for employees. Labor offices also record job applicants.

5.4. Segmentation

Segmentation is the core subject of this diploma thesis. The company P&E is focused on recruitment of IT specialists. There are several segments in which they can find their customers.

One segment is based on companies/institutions with different business activities that needs to maintain information technology in their company, even elementary schools have their “IT specialists” who take care of their computers, education software etc. Companies within this sector usually do not need deep knowledge of specialized fields of ICT. Finding employees is not usually so hard there and it is just a small part of their recruitment activities. The number of employees in these IT departments is small.

The second segment is made up of companies with large IT departments but their business in not in the ICT field. For example, banks have large ICT departments to support their activities in the field of payment transactions, internet banking etc. These companies are usually larger and have their own resources for recruitment. However, they commonly cooperate with personnel agencies. The reason for not making a deeper segmentation of these companies is because this segment is small and it is hard to identify it. These companies are counted just in single units.

The third segment, which is going to be examined and segmented, is ICT companies. These companies employ the highest share of ICT specialists who are a perspective commodity for personnel agencies focused on ICT and it is the reason why ICT companies would be considered in the next steps of the segmentation analysis. One more presumption should be made and it is that the share of non ICT specialist in these companies is small so we do not take it into consideration.

Approaches to segmentation were described in the theoretical part. The customer based approach is going to be applied because the product itself is hard to qualify and it is variable. Both intuitive and systematic approaches help with the segmenting of ICT companies. The idea behind it is that hard data and statistical analyses of companies would

be provided with knowledge of professionals. Techniques that are used belong to the inductive post hoc segmentation approach.

Two-step clustering techniques are used, it belongs to the independence techniques of the segment identification.

The two-step clustering method is used when large data sets are used. In this case, there were 6429 items which were included in the analysis. Another advantage of the two-step clustering method is that either categorical or continuous data can be used. As the name suggest, there are two steps that are run automatically in the SPSS program after the basic set up.

Segmentation continues with the development of clusters in which the Segment Evaluation Matrix (SEM) is included where it helps with targeting.

5.4.1. Barriers of Segmentation

The knowledge of barriers helps preventing possible problems and misinterpretations of segmentation as it is described in the theoretical part.

Lack of experience with segmentation and HR marketing might cause problems in any step of the segmentation process. Elimination is reached by a discussion with HR marketing experts and with the use of the statistical method of clustering.

The interpretation of results of the clustering method is inaccurate because the gained data is not normally distributed so that during the interpretation long right trail of distribution has to be considered.

Data form the Albertina database, which represents all companies that are signed up in the Czech trade register, is used for the cluster analysis. This does not reflect companies which are really working. The list of ICT companies created by eProfil.cz includes approximately eight hundred items(Ats Consulting, 2011), the Personal and Engineering database includes approximately six hundreds items and the Albertina database that includes more than six thousand entities which are signed up. These are all ICT companies with filtered physical entities. The reason why the data form the Albertina database is used is that it represents all companies, the complexity of information that is not influenced by their own presentation on the internet.

5.4.2. Determination of Segmentation Variables

The selection of base variables was influenced by the available data. One of the variables that would be nice to have is a number of the open positions during a year and a seasonality of recruitment. This is hard to measure; companies (except the largest one) are not able to define it properly. Because these data are not available so they are just estimated and taken into consideration while the development of segments is done.

The first decision about variables is whether to use customer based or product based variables. The reason for choosing customer based variables is that perception about product is strongly affected by its presentation and there is a clash between general understanding of personnel agencies and what P&E does. Without the experience of the particular product, no reasonable result cannot be gained.

Customer based variables are used to define customers from the basic point of differentiation like size, place, and activity.

Base variables that are used include: year turnover, number of employees, number of premises, size of a municipality where the company operates, and classification of economic activity (derived prevailing OKEČ classification)

All variables are independent variables that are connected to customers.

5.4.3. Results of the Two Step Cluster Analysis

The cluster analysis input data was filtered according to needs of segmentation during the analysis of the two steps. Several steps with different data sets were proceeded in order to gain the best result with regard to the current strategy of P&E. Each step contains output from the SPSS (Appendix- Output of SPSS analysis), interpretation of clusters and reasons why any modification of the data set was made. The interpretation of clusters represents the clusters' means that is influenced by a right long trail distribution of data. For example, if the mean is 6-9 employees then it means that there is the highest share of companies with this number of employees but they can have a higher number of employees. All of the results of the two step analysis described below were evaluated as good which means that the cluster silhouette measures are cohesion-separated.

The output from the SPSS software(Appendix- Output of SPSS analysis, SPSS output 1) shows the result of the two-step cluster analysis that was run with all the data at the first step. Two large segments were uncovered.

Table 2

Cluster	1	2	3
Percentage	52%	46%	2%
Turnover	5 - 9 mil.	5 - 9 mil.	300 - 499 mil.
Number of employees	6 – 9 employees	6 – 9 employees	200 employees
Number of premises	0-1	0-1	3
Size of municipality	Prague	Small municipalities (not Prague, Brno, Ostrava)	Prague, Brno

Source: own research

Table 2 shows the results of the analysis. It shows the only significant difference between two biggest clusters (cluster 1 and cluster2) which is the size of municipality. It shows the only difference between Prague and small municipalities and the influence of large companies as outliers in the last segment.

Companies in regions search for employees in a different way. They still use mainly local sources that P&E is not able to provide in a sufficient way. Also personal contact which is important for their cooperation is limited.

The second step was to exclude outliers (Appendix - excluded outliers) because their huge numbers with small occurrence influence the statistics, like the result of cluster 3 shows.

Table 3

	Cluster 3	Cluster 2	Cluser 1
Percentage	50%	45%	5%
Turnover	5 - 9 mil.	5 - 9 mil.	100 - 199 mil.
Number of employees	0-1	0-1	1
Number of premises	0-1	0-1	2
Size of municipality	Prague	Small municipalities	Brno (occasionally Prague)

Source: own research

Cluster 1 shows that excluding outliers helped with the distribution within clusters.

Because Prague, as a city of a large size, has evidently a large impact on segmentation, I decided to analyze only the companies in Prague in the next steps. The second reason is that P&E is placed in Prague. The localization is more convenient for communication and cooperation and P&E is not able to serve the whole republic in its current state with its current sources. Also the differentiation between clusters is not significant for the purpose of personnel agency.

The SPSS Output 5 represents the segmentation of Prague companies (with outliers). The reason why outliers were again included was that they are important companies that employ a large share of ICT specialists, as was mentioned earlier, and thus they can be interesting segments for targeting.

Table 4

	Cluster 1	Cluster 3	Cluster 2	Cluster 4
Percentage	71%	24%	4%	1%
Turnover	5 - 9 mil.	100 - 199 mil.	60-200 mil	1000 mil
Number of employees	0	6 – 9 employees	Around 50 employees	300-500 employees
Number of premises	0	More then 1	More then 2	Around 2

Source: own research

It is obvious from Table 4 that the largest cluster contents of the smallest companies and outliers of large companies created the smallest segment.

The next step was to exclude the large outliers (same way as in the previous step because it is influencing the composition of results) and analyze the economic classification of each cluster.

Table 5

Cluster	3	2	1
Percentage	70%	26%	4%
Turnover	5 - 9 mil.	100 - 199 mil.	100 - 199 mil.
Number of employees	0	6 - 9	6 - 9
Number of premises	0	More than 1	More than 2

Source: own research

Frequencies of economic activity were created for each cluster. There is the most significant share of Publication, supply and software consultancy in all the clusters. However, other software services and hardware consultancy occur in the second sector which is also significant (Appendix- Output of SPSS analysis). Similar results are recognized in the analysis below showing clusters with additional variables of economic classification. The output of the two-step cluster method of Prague companies without outliers is shown in Table 6.

Economic classification of variable was applied as an additional variable to the data filtered as Prague companies without outliers because the quality of results in the previous analysis was evaluated as poor thus the cohesion and separation of clusters was bad.

Table 6

	Cluster 5	Cluster 3	Cluster 6	Cluster 4	Cluster 2	Cluster 1
Percentage	47%	15%	12%	11%	10%	5%
Classification of economic activity	Publication, supply and software consultancy	Other software delivery and software consultancy	Hardware consultancy	Other activities related to computer technology	Activities in the field of computer technology	Other software delivery and software consultancy
Number of companies	1341	421	361	324	271	147
Turnover	1-2 mil CZK	10 - 29 mil.	10 - 29 mil.	10 - 29 mil.	1-2 mil CZK	100 - 199 mil.
Number of employees	1-5	6-9	6-9	6-9	1-5	50-99
Number of premises	1 or none	1 or none	1 or none	1 or none	1 or none	More than 2
Size of municipality	Prague	Prague	Prague	Prague	Prague	Prague

Source: own research

All the changes in the data set of the clustering were done to find a suitable number of segments. These segments are measurable, their size is comparable, and their number is convenient for future development.

The output of the two-step clustering analysis interpreted in the table 6 creates reasonable clusters and development of each cluster is done in next chapter.

5.4.4. Development of Clusters

The development of clusters is done based on a discussion with HR marketing specialists and their qualified estimations. Only the clusters from the final result in Table 6 are developed. The problem of a not regularly distributed data set was mentioned and in this place I would like to mention it again because it has influence on interpretation. A profile and a Segment Evaluation Matrix is developed for each cluster.

Cluster 5 – Small SW companies

Customer profile: These are small companies with a maximum of 10 employees and small turnover. Their field of activities is connected to the software industry (IT services). They do not have a firm structure of a company. They often do not trust and do not understand advantages of personal agencies; they prefer to find new colleagues on their own. These companies work based on personal relations so they use mainly personal contacts and recommendations when searching for new employees, they try to avoid paid services connected to recruitment. In case that they are not able to find suitable candidates, they actively approach a personnel agency, to be able to do it, the personnel agency has to have easily described services, advantages and they have to be able to find it easily on the internet.

Needs of customers: They usually do not search for deep specialization of their employees; they rather search for employees with a wider scope of specialization. They are not able to offer a high salary. The fluctuation of employees is high in case they perceive it as a startup of their career, in other cases the fluctuation is low. Their specific needs are hard to identify, they themselves are not even able to define it and prepare a meaningful job description.

Decision making process/buying process: There is usually one person who makes the decisions and for that person it is usually not the only thing to take care of, they are usually owners or managers of the company.

Influences of decision making process: The personal approach of the decision maker influences the process and the biggest influencer is money because these companies have small budget. Understanding of personnel agency's services is core for their decision making.

Table 7 SEM Cluster 5

Cluster 5							
Segment qualification	Score	Weighting	Ranking	Segment attractiveness	Score	Weighting	Ranking
Common user needs and characteristics	1	33.3333	33.33	Profitability	1	8.33333	8.33
Identifiable competition	0.5	26.6667	13.33	Barriers to entry	1	5.3333	53.33
Identifiable communication mix	0.5	21.6667	10.83	Payment habits	0.5	26.6667	13.33
Common distribution channel	1	18.3333	18.33	Sustainable competitive advantage	0.5	11.6667	5.83
Total			75.83				80,83

Source: own research

Cluster 3, 4 – small or middle-size companies

Customer profile: These are companies with 6 to 50 or more employees and the turnover is in the range of 10 to 50 mil CZK or more. They operate at the IT market in a wider range of activities, except hardware consultancy. These companies are able to cooperate with a personnel agency but they usually do not actively address them, they do so only in extreme cases. The reason why cluster 3 and 4 were merged is because they belong to the group of the same size and they have similar characteristic.

Needs of customers: These companies search for “common” IT specialist but also IT specialists with specific skills which is not easy to find. They are open to cooperation in case the HR manager is not able to manage all applicants or that they are not able to find a specialist. They can obtain new employees regularly or

fitfully, that depends on the strategy of a company. These companies are learning how to work with their own HR marketing and promote open positions on their websites or on job portals (Podnikatel.cz, 2010) .

Decision making process/buying process: depends on the concrete structure of the company.

Influences of decision making process: The management structures of these companies depend on many factors. A very important indicator is if the company has a human resource manager and if he has enough time to maintain the whole HR agenda. In case he does not have enough time it is purposeful to offer HR services to help them and in case they are able to manage their agenda it is probably better to offer them experience in IT connected to HR.

Table 8 SEM Cluster 3,4

Cluster 3,4							
Segment qualification	Score	Weighting	Ranking	Segment attractiveness	Score	Weighting	Ranking
Common user needs and characteristics	1	21.6667	21.67	Profitability	1	21.6667	21.67
Identifiable competition	0.5	23.3333	11.67	Barriers to entry	1	30	30.00
Identifiable communication mix	0.5	20	10.00	Payment habits	0.5	30	15.00
Common distribution channel	1	35	35.00	Sustainable competitive advantage	0.5	18.3333	9.17
Total			78.33				75.83

Source: own research

Cluster 6– small or middle HW consultancy companies

These companies have similar features as clusters 3 and 5 and all of their changes come from their HW specialization. There is small demand for new employees in hardware in general because their fluctuation is very low and the community of these specialists is small, they do know each other and they are able to maintain the demand themselves.

Table 9 SEM Cluster 6

Cluster 6							
Segment qualification	Score	Weighting	Ranking	Segment attractiveness	Score	Weighting	Ranking
Common user needs and characteristics	1	35	35.00	Profitability	1	26.6667	26.67
Identifiable competition	0.5	20	10.00	Barriers to entry	1	25	25.00
Identifiable communication mix	0.5	16.6667	8.33	Payment habits	0.5	30	15.00
Common distribution channel	1	28.3333	28.33	Sustainable competitive advantage	0.5	18.3333	9.17
Total			81.67				75.83

Source: own research

Cluster 2 – small IT companies

These companies are similar to cluster 5 because these companies are characterized by their extremely small size. There is just one difference, that the number of these companies is smaller and their scope of activities is wider. It is hard to identify what a company does and what are its needs. Also own database of candidates can be insufficient for serving their needs.

Table 10 SEM Cluster 2

Cluster 2							
Segment qualification	Score	Weighting	Ranking	Segment attractiveness	Score	Weighting	Ranking
Common user needs and characteristics	1	20	20.00	Profitability	1	20	20,00
Identifiable competition	0.5	41.6667	20.83	Barriers to entry	1	53,3333	53.33
Identifiable communication mix	0.5	15	7.50	Payment habits	0.5	16.6667	8.33
Common distribution channel	1	23.3333	23.33	Sustainable competitive advantage	0.5	10	5.00
Total			71.67				86.67

Source: own research

Cluster 1 – large companies

Customer profile: These companies are large players, often international corporations with strong corporate cultures and specific requirements that are

defined for each company. They do have their own recruitment systems and they cooperate with more personal agencies. Because they are larger and successful, they pay higher wages so the candidates approach them actively and a creation of an inner database is easier. This cluster is small but very strong.

Needs of customers: They search for deep knowledge of a specific field, but they are also able to train skills that they need so they are sought-after by graduates and also may search for recent graduates themselves. Their HR department is usually workloaded and any help with the number of irrelevant applicant saves them time for other important activities. Their demand for new employees is high and regular.

Decision making process/buying process: they are open for cooperation; complicated selection procedures which are done only in particular time periods are commonly used.

Influences of decision making process: It depends if they are able to find the candidate on their own or if it is hard to find candidates for the positions.

Table 11 SEM Cluster 1

Cluster 1							
Segment qualification	Score	Weighting	Ranking	Segment attractiveness	Score	Weighting	Ranking
Common user needs and characteristics	1	28.3333	28,33	Profitability	1	36.6667	36.67
Identifiable competition	0.5	20	10,00	Barriers to entry	1	20	20.00
Identifiable communication mix	0.5	15	7,50	Payment habits	0,5	26.6667	13.33
Common distribution channel	1	36.6667	36,67	Sustainable competitive advantage	0,5	16.6667	8.33
Total			82.50				78.33

Source: own research

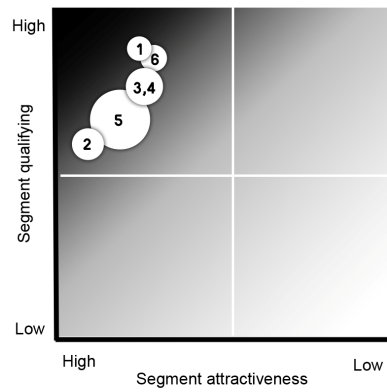
Table 12 contains a SEM summary of all clusters. Figure 10 and Figure 11 show graphical presentation of SEM.

Table 12 Summary of SEM

	Segment qualification	Segment attractiveness	Size
Custer 5	75.83	80.83	47%
Cluster 3,4	78.33	75.83	26%
Cluster 6	81.,67	75.83	13%
Cluster 2	71.67	86.67	9%
Cluster 1	82.50	78.33	5%

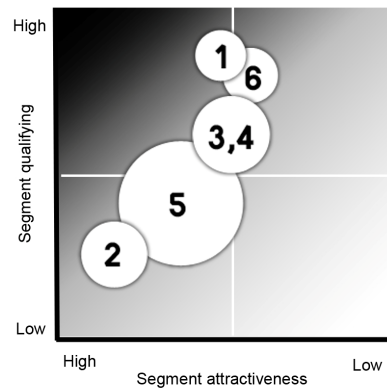
Source: own research

Figure 10 SEM



Source: own research

Figure 11 SEM



Source: own research

The SEM (figure 10, figure 11) shows whether the uncovered segments can be served effectively with its own marketing mix. There is an important relative position of the segments towards each other because the scale of the matrix is based on managerial judgment as is shown in Figure 10 and Figure 11. From the first point of view, no segment is starting, does not have the highest segment qualification and segment attractiveness at the same time.

Clusters 3,4 (small or middle-size companies) and 6 (small HW consultancy companies) have smaller attractiveness but higher segment qualification. It means that it is easy to enter and address new companies. These segments may not be attractive in the long term. However, it is the second largest segment and there will be enough customers for small companies like P&E.

Cluster 1 (large software companies) has the highest segment qualification, it even has hard success and lower segment attractiveness, P&E knows what to expect and how to serve companies in this sector which makes the sector interesting.

Cluster 5 (small SW companies) takes a place as unimportant segment in term of market qualifying and market attractiveness where it is placed in the middle, on the other hand the segment is interesting with their large size.

Cluster 2 (small IT companies) is expressive with high segment attractiveness compared to other clusters but to serve them is extremely difficult so segment qualifying is low and it makes the segments uninteresting for the purpose of the selected company.

5.4.5. Fulfillment of Effective Market Criteria

Effective market criteria were described in the theoretical part. Segments that fulfill these effective market criteria are perceived as correctly uncovered segments.

The size of segments is more or less equal. The largest number of companies is included in the cluster 5 of small SW companies. The problem with this segment is that these companies are very small and their purchasing power is small. On the contrary, cluster number 1 is made up of the largest companies where their need of new employees is regular and their purchasing power is strong.

All segments are able to be reached and served but different approaches have to be chosen. Segments are differentiated and they each respond to a different marketing mix. There is an exception in cluster 3 and cluster 4 because these segments react to a similar marketing mix so they were merged into one segment.

Effective programs can be found for attracting each segment. However, these programs are very different, for example the cluster 5 of micro companies would react passively but clear promotion on internet would be fine.

All segments can be perceived as stable in the long term perspective.

6. Proposals and Recommendations

The aim of this part is to comment the created clusters in context to the situation of the P&E company and provide recommendations.

The cluster number 5 (small SW companies) creates is the largest segment thus it is interesting because of its large scale of possible customers. These companies prefer cheaper ways how to find employees. In a case where they are not able to find a candidate with own resources, they actively search for help and they are able to pay for it. The important point is that these companies search actively and only in certain cases they are not successful. Any active promotion will probably not be effective. The recommendation is to publish a website with a clear message and invest into a regular search engine optimization to be visible on the internet.

The fact that these companies work in software industry might help with promotion and addressing them as well as with effective recruitment to these companies.

Threads for the segment is influence of large and international companies and trend of simplification software decrease of demand.

Clusters 3 and 4 were merged together because there is perception that they are responding to the same marketing mix. Also, a segment that is large enough to be interesting for targeting with existing strategy occurs after the merging which is an advantage. The disadvantage is that companies in this segment must be actively and regularly addressed and appeal to cooperation. The first contact is always the hardest one because it is not clear whether the companies have HR departments or who is in charge of the recruitment activities. A CRM or another system to maintain contacts and activities with companies should be set up. Data from the past can become an important source of information for future decision making processes and any communication with companies.

Another complication in this segment is the wide range of company activities and many professions in case that a company builds an own database of candidates. There is one exception of salesmen in IT because they are needed in every field of the IT business. Sales departments were the only ones which were supported even when the financial crisis occurred. Nowadays it is one of the most stable and extended professions. Another question is how much is a salesman an IT specialists. A similar problem occurs with SEO

marketers, it is hard to say if they are included in ICT or in marketing. There are many professions with overlapping categories. A personnel company focused on ICT has to decide whether to be open to these positions or not. Regarding IT salesmen, I would recommend to be open to them because there is huge potential in having them.

This segment is stable as a whole that is convenient for future interest.

Cluster 6 (small or middle HW consultancy companies) is not an interesting segments for P&E because this segment is small, as the SEM analysis has shown, the segment attractiveness ration is the smallest. The community in HW consultancy is small and closed. However, I believe that these companies would be willing to cooperate but it would be hard to fulfill obligations and find suitable candidates in the current resources of P&E.

Companies in cluster 2 (small IT companies) are distinguished by their wide range of activities, small size and turnover. It is nerly impossible to create a marketing mix for this cluster. Together with its small potential of usage personnel agency services, this segment becomes uninteresting.

The last uncovered segment includes the largest ICT companies. These companies have large purchase power and it might be interesting to target them even if there are only a few of them in the segment. The most important characteristics are that these companies have large and stable demand for new employees which can ensure the stability of P&E. The main obstacle here is that these companies put up posts for personnel agencies and becoming a partner is not easy and takes lots of effort.

Witch segment to target?

P&E should target and address its main activity to clusters 3,4 (small or middle-size companies). It is also worth putting effort into signing a contract with a few large companies form cluster 1 to ensure future stability. In all cases, good presentation on internet helps a lot, companies should also invest to search engine optimizations to be visible for potential customers form cluster 5 (micro companies)

The first step is to prepare a high-quality website with a clear message stated for small companies and with appropriate information (for example references and contacts) for larger companies. Investments to search engine optimizations follow, it is important to be visible on the internet in case any company would like to actively approach P&E.

P&E should start a CRM that would maintain all contacts and activities with customers, prepare a database of companies in cluster 3,4, actively address these companies and work with them regularly. This sector should be the main sector to target.

To avoid possible variations in demand of cooperating companies (thus the income), P&E should ensure cooperation with a few large companies. In case there is agreed cooperation, P&E can start to work on searching candidates for their open positions and not wait until cooperation with new companies is installed. In case that P&E has enough clients from cluster 3,4 they can focus on them because they are only a personal agency working for them so the probability of finding suitable candidates which bring charges is higher.

For the purpose of stability of P&E can be addressed not just ICT companies but also big companies which do not operate ICT, but with large IT departments are potential customers and they belong to the same marketing mix as companies in cluster 1 (the largest ICT companies).

The advantage of the solution is that ICT market is more or less stable (Hill, 2011), targeting to a part of the segment does not require large changes in current operation of the company and ensure stability of the company. The disadvantage is that this model is very attractive and smaller personnel agencies can easily be adopted and large personnel agencies are large enough to serve whole ICT market. In future solution can be to create clear unique recruitment product (now they bet on flexibility) based on product based segmentation (not current customer based segmentation)

All clusters that P&E was recommended to target are large enough to ensure enough customers and no rapid changes in the few nearest years are expected even when considering that the ICT industry is young with a fast development.

7. Conclusion

The theoretical part of this diploma thesis explains the core of market segmentation. It provides a summary of possible segmentation approaches and techniques which also provide necessary background and context for the practical part.

ICT companies were segmented for the purpose of the selected company Project & Engineering in the practical part of this thesis. P&E works as a personnel agency on the market of ICT specialists. The two-step analyses run by SPSS were used to uncover segments. Data which were used for the segmentation were gain form the Albertina database which includes all companies in Czech trade register. A total number of 6 clusters were uncovered. Description was developed for all segments based on experience and discussion with HR marketing experts. Clusters were merged in step two, they did not respond to effective segmentation criteria because they respond to the same marketing mix. All clusters were included in the Segmenting Evaluation Matrix which helped with targeting.

Three of the newly created clusters are suitable for the company interest. Project & Engineering can target to these clusters without any large changes of their current strategy or worries about sustainability.

The stated hypothesis (Uncovered segments, that are suitable for the company interest, can be identified by the defined methodology.) can be confirmed.

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9. Appendices




9.1 Appendix- Output of SPSS analysis

Source: own research, output of SPSS program

SPSS output 1

Clusters

Feature
Importance
□ 1

Cluster	1	3	2
Label			
Description			
Size	 61.8% (3326)	 46.9% (2960)	 2.3% (148)
Features	pr_OBRATKOD 0.01	pr_OBRATKOD 0.01	pr_OBRATKOD 0.37
	pr_POC_ZAM 0.01	pr_POC_ZAM 0.01	pr_POC_ZAM 0.27
	pr_POCPROV 0.30	pr_POCPROV 0.46	pr_POCPROV 3.40
	pr_VELOBEC Procenta 0.83	pr_VELOBEC Procenta 0.06	pr_VELOBEC Procenta 0.77

SPSS output 2

Clusters

Feature importance
□ 1

Cluster	3	2	1
Label			
Description			
Size	50.5% (3204)	44.9% (2974)	4.6% (292)
Features	pr_OBRATKOD 0.01	pr_OBRATKOD 0.01	pr_OBRATKOD 0.21
	pr_POC_ZAM 0.00	pr_POC_ZAM 0.00	pr_POC_ZAM 0.10
	pr_POCPROV 0.28	pr_POCPROV 0.41	pr_POCPROV 2.26
	pr_VELOBEC procenta 0.33	pr_VELOBEC procenta 0.08	pr_VELOBEC procenta 0.60

SPSS output 3

Clusters




Feature importance
□ 1

Cluster	1	3	2	4
Label				
Description				
Size	70.8% (2036)	24.1% (696)	4.0% (115)	1.3% (39)
Features	pr_OBRATKOD 0.01	pr_OBRATKOD 0.02	pr_OBRATKOD 0.17	pr_OBRATKOD 1.38
	pr_POC_ZAM 0.00	pr_POC_ZAM 0.11	pr_POC_ZAM 0.08	pr_POC_ZAM 0.57
	pr_POCPROV 0.00	pr_POCPROV 1.13	pr_POCPROV 2.65	pr_POCPROV 1.79
	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00

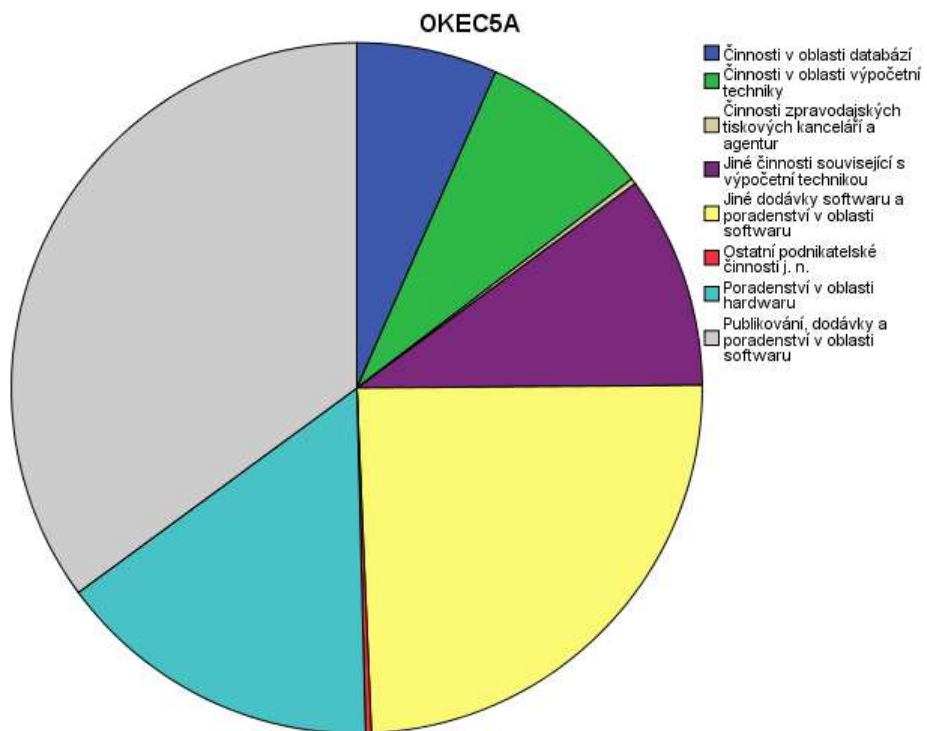
SPSS output 4

Clusters

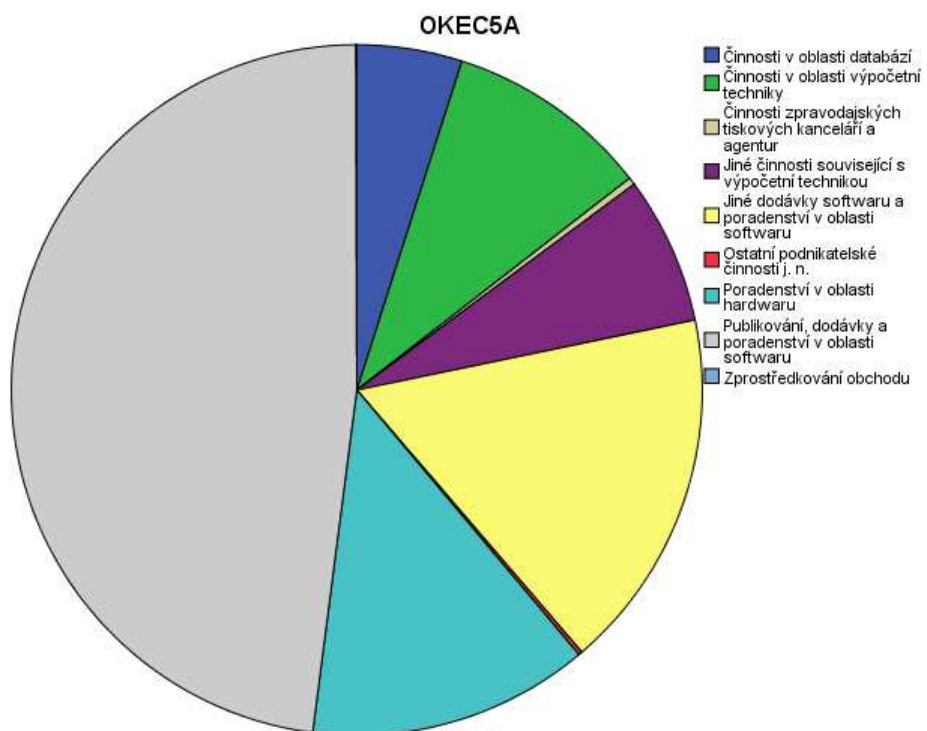
Feature
Importance
■ 1

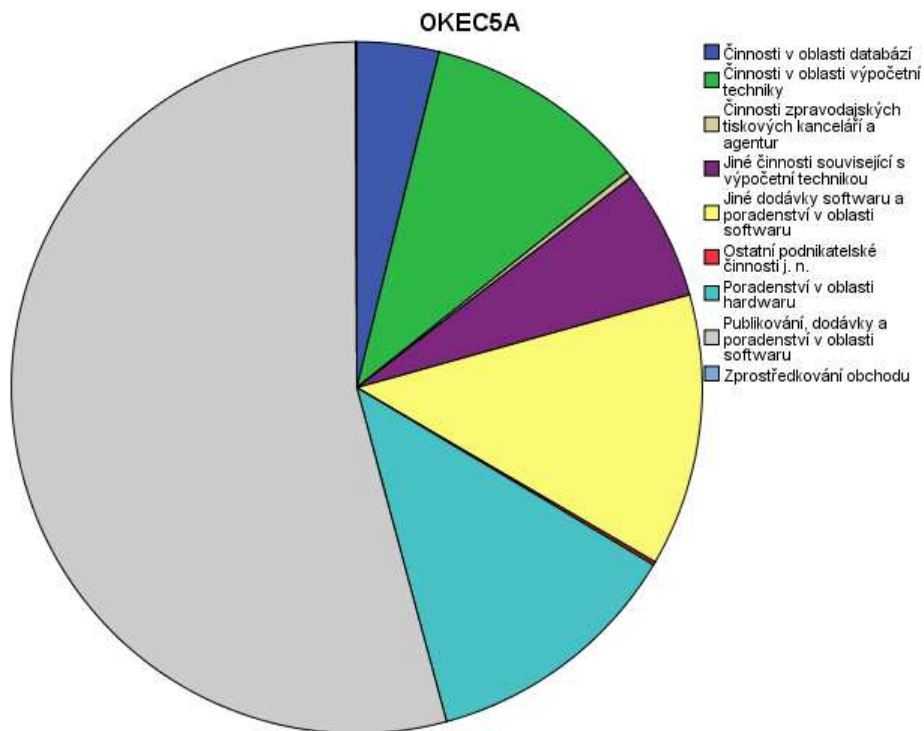
Cluster	3	2	1
Label			
Description			
Size	 70.1% (2008)	 26.0% (744)	 3.9% (113)
Features	pr_OBRATKOD 0.01	pr_OBRATKOD 0.02	pr_OBRATKOD 0.32
	pr_POC_ZAM 0.00	pr_POC_ZAM 0.01	pr_POC_ZAM 0.14
	pr_POCPROV 0.00	pr_POCPROV 1.18	pr_POCPROV 2.31
	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00

SPSS output 5



SPSS output 6





SPSS output 7

Clusters

Feature Importance
 □ 1.0 □ 0.9 □ 0.8 □ 0.7

Cluster	5	3	6	4	2	1
Label						
Description						
Size	40.8% (1341)	14.7% (421)	12.8% (361)	11.3% (324)	9.5% (271)	5.1% (147)
Features						
	pr_POCPROV 0.21	pr_POCPROV 0.43	pr_POCPROV 0.37	pr_POCPROV 0.47	pr_POCPROV 0.28	pr_POCPROV 2.16
	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00	pr_VELOBEC procenta 1.00

9.2 Appendix - excluded outliers

Excluded outliers:

- because of number of employees (>1)

IBM Global Services Delivery Center

Tieto Czech s.r.o.

Accenture Services, s.r.o.

DHL Information Services (Europe),

AutoCont CZ a.s.

Hewlett - packard, s.r.o.

IBM Česká republika, s.r.o.

ČEZ ICT Services, a. s.

RWE Interní služby, a.s.

- because of number of premises (>11)

AutoCont CZ a.s.

Ostravská univerzita - Servis, s.r.o.

Stapro s. r. o.

- because of turnover (>1,6)

AutoCont CZ a.s.

Hewlett - packard, s.r.o.

IBM Česká republika, s.r.o.

ČEZ ICT Services, a. s.

RWE Interní služby, a.s.

Seznam.cz, a.s.

SAP ČR, s.r.o.

Oracle Czech, s.r.o.

T-Systems Czech Republic a.s.

AVG Technologies CZ, s.r.o.

Tieto Czech s.r.o.

Asseco Czech Republic, a.s.

Ness Czech, s.r.o.

Sun Microsystems Czech s.r.o.

Accenture Central Europe B.V., org.

Siemens IT Solutions and Services, s.r.

Home Credit International, a.s.

Face UP NET, s.r.o.

Soft - tronik, a.s.