



University of Economics, Prague

# **Master's Thesis**

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**Title of the Master's Thesis:**

Analysis of current segmentation procedures within the  
3M Industry and Transportation department and  
recommendations for future segmentation approaches

Author:

Verena Breitbach

Supervisor:

Prof. Ing. Markéta Lhotáková, Ph.D.

### **Declaration of Authenticity**

I hereby declare that the Master's Thesis presented herein is my own work, or fully and specifically acknowledged wherever adapted from other sources. This work has not been published or submitted elsewhere for the requirement of a degree program.

Prague, 25 April 2012

Signature

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## **Abstract:**

The present Master thesis broaches the issue of market segmentation and its importance for the Industry and Transportation department of 3M Česko. Market segmentation has been recognized to be a very important tool for strategic marketing planning but currently, its implementation at 3M in the Czech Republic is in an early stage and therefore rather unorganized and not yet framed by precise guidelines. The hypothesis is that linking together need-based and descriptive customer behavior characteristics would lead to more effective market segmentation within the 3M Industry and Transportation department. Therefore, the goal of this paper is to first of all test if the hypothesis is right and if so develop a segmentation method that combines descriptive as well as need-based segmentation criteria. It is to be shown that such an approach could improve segmentation efforts at 3M Česko and lead to more reliable results.

The question that arises is whether 3M has understood the benefits market segmentation can bring for the company. And what has to be done in order to improve clustering of customers and to increase 3M's sales volume? Can segmentation take place on one level or is a multi-layer approach the better option? The present study tries to answer these questions by comparing theoretical findings from an extensive literature review with results obtained from semistructured interviews with 3M sales and marketing managers.

Above all, one of the main points for improvement in the future is the collection of more market data and the combination of primary data with secondary information already available. The interviews have shown that even though managers are aware of the difficulty to understand 3M's complex and broad market, the feeling predominates that not enough effort is put into gathering additional information. Furthermore, it is recommended to perform descriptive segmentation through the usage of industry coding on a division-wide level, whereas need-based segmentation will be subject of each division individually. Moreover, keeping track of customer data in a standardized database is the key to success. The given recommendations are divided into actions that can be undertaken in the short, medium and long run in order to reach a department-wide effective and efficient use of the multi-layer segmentation in an organized and timely manner.

## **Key words:**

Market segmentation, B2B marketing, 3M

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## II. List of Abbreviations

3M	Minnesota Mining & Manufacturing Corporation
AAD	Automotive Aftermarket Division
AD	Automotive Division
ASD	Abrasives Systems Division
B2B	Business-to-Business
B2C	Business-to-Consumers
CEE	Central and Eastern Europe
CRM	Customer Relationship Management
CZK	Czech Republic Koruna
DMU	Decision-making Unit
e.g.	exempli gratia, for example
etc.	et cetera
I&TB	Industry and Transportation Business
IATD	Industrial Adhesives and Tapes Division
ISIC	International Standard Industrial Classification of all Economic Activities
IT	Information Technology
OEM	Original Equipment Manufacturer
p.	page
pp.	pages
SIC	Standard Industrial Classification
US	United States
VALS	Values and Lifestyles
\$	US-Dollar
%	percent

# HYPOTHESIS & PROBLEM DEFINITION

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## Introduction

An unknown author has once said: “Birds of a feather flock together” and without knowing it, he has thereby captured the very basics of **market segmentation** well. This proverb perfectly reflects the essence of geo-demographic segmentation, which is based on the assumption that people are similar to their closest neighbors in their sociodemographic characteristics, lifestyles and consumption behaviors. However, market segmentation is more than the pure classification of customers according to demographic characteristics; other variables play an important role for achieving applicable results as well. Segmentation is widely considered to be the first step in the development of a business and marketing strategy. The creation of a clear target marketing plan is at the heart of every effective business strategy and this is the reason why market segmentation has become so prevalent and has long been used for business forecasting. Nevertheless, until today, many organization fail to adequately embrace the concept and often only trade sectors or product groups are used as the foundation for segmentation. More customer orientation is needed and their characteristics, needs and purchasing behavior, as well as decision-making units, should be taken into consideration.

Also for **3M Česko** segmentation is a topic with growing importance. The matter of market segmentation, specifically industrial market segmentation, is therefore highly relevant for the Industry and Transportation business department (I&TB) of 3M in the Czech Republic, for which this analysis is conducted. Currently, 3M uses a rather simple segmentation procedure within its Industry and Transportation department, which is not standardized or framed by precisely defined rules and largely relies upon employees’ gut feeling concerning the grouping of their costumers. Each division takes care of its own segmentation and up-to-now, there are no overall standards defined. The reason for this is that the topic of market segmentation has been widely neglected at 3M Česko in the past and it was no big problem to do so, since there was constant growth in their sales figures. Nevertheless, now, one is aware of its importance but struggling to some extent with the execution. Depending on each division’s approach and attitude towards the topic, process varies among the departments within the Industry and Transportation business unit. Often, customers are segmented according to only one, mainly need-based segmentation criterion, but the urge for referring to more, also descriptive features for segmentation has been realized. However, until now, this second form of segmentation is rarely practiced by the sub-departments and no overall segmentation scheme that would result in a linkage of descriptive and need-based segmentation criteria exists.

The **hypothesis** is that linking together need-based and descriptive customer behavior characteristics would lead to more effective market segmentation within the 3M Industry and Transportation department. This postulation can further be divided into two requirements: firstly, it would mean that it is possible at all to create such a link between segmentation variables and secondly, the effort must be worth the costs and benefits have to be evidently visible in order to prove the effectiveness of the segmentation approach. It has to be noted here that it goes beyond the scope of this paper to include an exhaustive cost analysis; the main aim at this point is to see if a multilevel segmentation approach is possible at all and whether it is indeed recommendable to go beyond the currently existing need-based segmentation method and establish a new, more strategic segmentation system. If this should be the case, the challenging question of how it could be possible to connect need-based and descriptive information is to be solved. Also, it is aimed to find out whether it is feasible to simplify the segmentation process and establish a new approach and segmentation requirements that can be implemented easily and used by all divisions simultaneously.

This hypothesis implies that there is space and gaps in the current segmentation procedures that are unexploited and which, used appropriately, could lead to identification of sales potential. In case that the hypothesis proves right and segmentation would become more effective through combining need-based and descriptive segmentation criteria, the aim of this thesis is to develop an approach and guidelines that could be used by all divisions to perform market segmentation. First, an evaluation of the current segmentation methods should be performed and based on this, recommendations for future handling of the market segmentation topic for 3M should be given.

Ultimately, the main **objective** of this Master work is to obtain an overview about the market segmentation approach presently conducted and to develop strategies that could be used to increase satisfaction, as well as the sales volume of 3M in the short, medium and long run. Besides, this project was conducted because the need for a more structured approach has been realized within 3M Česko. By interviewing sales and marketing managers of the company, it is tried to find out how important segmentation is in their point of view and where they see potential areas for improvement or shortcomings of the current system. Linking the research findings to the learning obtained from studying segmentation theory will provide the basis for the recommended future strategies.

The main **challenge** is the enormous product portfolio and the applicability of many of these products across various industries and for multiple purposes. Furthermore, the industries and segments that the five divisions are dealing with are of different sizes, compositions and needs so that it is highly challenging to first of all find a way to segment them at all and secondly implement one segmentation system that can be used by all divisions and allows for comparison. Many segmentation decisions are, therefore, not based on reliable market data, but rather on gut feeling, employees' experiences and information received by 3M sales personnel. This constitutes a problem, because it is

thus not possible to crosscheck and/or give reasoning to decisions or strategies made by individuals. Another obstacle to reliable market segmentation is given by the fact that many of the employees responsible for grouping the markets at 3M do not necessarily have a marketing background but are specialized in some technical or engineering field. Concerning the complex industrial product portfolio, this definitely makes sense, with regards to market segmentation, however, instructions and training need to be given to assure a clear understanding and implementation of a suitable segmentation process.

This research project begins with a situation analysis of theoretical concepts concerning market segmentation. In the second part, current segmentation efforts of 3M will be described and assessed. Following, the data collection and evaluation of the interviews will be presented and a link between research and theoretical findings will be drawn. Within the scope of the subsequent implementation, a proposal for a multiple layer segmentation strategy will then be indicated and an action plan for increasing sales figures and improvement of customer understanding is suggested. The conclusion shows a connection and summary of the most important findings.

# PART I: STATUS QUO

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## 1. Brief Company Description

*“We are a truly unique company”* (George W. Buckley, CEO of 3M)

“3M is a diversified global manufacturer, technology innovator and marketer of a wide variety of products.” (3M 2010 Annual Report) Founded in 1902, the Minnesota Mining & Manufacturing Corporation (3M), operates in six business segments, which are Industrial and Transportation, Health Care, Display and Graphics, Consumer and Office, Safety, Security and Protection Services, and Electro and Communications. 3M is a global, science-based company and among the leading manufacturers of products for many of the markets it serves. It is stressed on the company’s websites that its success steams from the company’s ability to tailor its technologies to customers’ needs and from the employees’ commitment to the company and to trying to “make life easier and better for people around the world.” (3M website)

3M is one of 30 companies in the Dow Jones Industrial Average and also is a component of the Standard & Poor's 500 Index. (3M Fact Sheet) In December 2010, 3M counted 80,057 employees of which 32,955 were employed in the United States and 47,102 worked internationally. 3M’s global sales amounted to \$27 billion at the end of 2010 of which \$17.5 billion where international or non-US sales, amounting to 65% of the company total. The company operates in more than 65 countries and products are sold in nearly 200 countries around the world through various distribution channels like wholesalers, retailers, dealers and direct sales. (3M website, 3M 2010 Annual Report)

“To the outside world, what we do looks a little like magic. We create entirely new product categories and breathe new life into markets crying for reinvention. It’s been called ‘the 3M effect.’”(George Buckley, 2010) For years, research and product development (R&D) have been important drivers of 3M’s sales growth reflecting a culture of shared ideas. The company spent almost \$1.5 billion on R&D in 2010. 3M’s products are sold around the world under various trademarks and the company also owns, or holds licenses to use, numerous U.S. and foreign patents. According to Booz & Company, 3M is - after Apple and Google - considered the most innovative company in the world. (Handelsblatt, 2011) “3M’s business model is to foster organic growth by inventing new products that previously did not exist.” (3M Innovation, 2010)

In the Czech Republic, 3M is present since 1991 and its headquarters are in Prague. In 2010, 3M Czech Republic reported a turnover of CZK1.3 billion. The managing director is David Vrba and about 100 people are employed at 3M Česko. (Chytil, 2011)

The following analysis is concerned with the segmentation procedures in the **Industry and Transportation department** of 3M; therefore, special emphasis will further be put on this business section while the others will widely be neglected. “The Industrial and Transportation segment serves a broad range of markets, such as appliance, paper and packaging, food and beverage, electronics, automotive original equipment manufacturer (OEM) and automotive aftermarket (auto body shops and retail).” (3M Annual Report, 2010) Products in this segment include tapes, abrasives, adhesives, filtration products, energy control products and products used in manufacturing, repairing and maintenance of automotive, marine, aircraft and vehicles. The department is further split into the Abrasive Systems Division (ASD), Automotive Division (AD), Industrial Adhesives and Tapes Division (IATD), Renewable Energy Division (RED) and Automotive Aftermarket Division (AAD). Each of these subdivisions has its own marketing and sales supervisor, all of whom were important and helpful contact persons for this study.

## PART II: THEORETICAL BACKGROUND



In order to analyze the current segmentation strategy of 3M in the Czech Republic and to suggest meaningful recommendations, it is first of all necessary to obtain an overview over existing theories and experts' opinion on the topic of market segmentation.

Since 3M's Industry and Transportation department, for which this analysis is conducted, is active not on the consumer, but on the industrial market, the first section of this part of the thesis will start off with a brief introduction and central characteristics of the industrial market and business-to-business marketing as well as buying centers in industrial markets.

In the following part, a literature review concerning the topic of segmentation will be given where the historical evolution of market segmentation will be briefly discussed before the concept will be defined and analyzed. Not only advantages and disadvantages of market segmentation will be listed, but challenges and trends will also be highlighted.

The last section will then be concerned with methodologies of market segmentation. Different methods, frameworks and segmentation bases will be introduced and compared and hence an ideal basis will be established for the analysis of 3M's segmentation approaches as well as the development of a new segmentation strategy.

## 2. Business-to-Business Marketing

*"Industry is the soul of business and the keystone of prosperity." (Charles Dickens)*

Generally, one distinguishes between two types of markets: consumer and industrial (B2B) markets. Since this work aims at initiating a segmentation strategy for 3M Česko which can thenceforward be used for strategic and marketing reasons, it is first of all important to investigate some key issues of the business-to-business (B2B) market the Industry and Transportation department of 3M is operating in. In the following, a definition of B2B Marketing will be given, characteristics of the industrial market will be pointed out and special emphasis will be placed upon the decision-making units in the B2B sector. This last point is important due to the fact that decision-making behavior in industrial markets is very distinct from consumer markets and these distinctions have to be taken into account when planning the segmentation procedure.

### 2.1. Definition Business-to-Business Marketing

Generally, marketing is the management process through which a firm designs, promotes and delivers goods and services to its customers. The marketing guru Philip Kotler defines marketing as "a social and managerial process by which individuals and groups obtain what they need and want through creating, offering, and exchanging



products of value with others.” (Kotler, 1997) Satisfying customer needs is the key element of any marketing activity. (Business Dictionary, 2012) Industrial, or business-to-business marketing, is the marketing of goods or services to industrial and institutional customers such as manufacturing firms, governments and retailers. (Webster, 1979)

B2B is concerned with transactions that take place between two companies conducting commerce with one another. In contrast to Business-to-Consumer markets (B2C), the consumer in B2B trade relationships is always another business. However, end consumers cannot totally be neglected. In short, Business-to-Business Marketing is about “meeting the needs of other businesses, though ultimately the demand for the products made by these businesses is likely to be driven by consumers in their homes.” (Harrison, Hague, 2010)

Hence the main distinction between B2B and B2C marketing relates primarily to the terms of intended customers. For a company’s marketing activities, this implies that a firm operating on the B2B market has to first of all gear its advertising and marketing efforts to other businesses. In order to do so, such a company is expected to understand the needs of its business clients and know how to operate within the boundaries of B2B commerce. (eHow, 2012)

In order to understand the concept of industrial marketing, it is crucial to realize that it is concerned with **derived demand**, meaning that the demand for industrial goods is resulting from the demand for consumer goods and services, thus a relationship of buyer-seller interdependence exists. Consequently, marketers should realize that sometimes it might be possible to encourage demand for their products by stimulating demand for their customers’ products. (Webster, 1979) In order to achieve such a nurturing, long-term oriented relationship, it is necessary to build up trust and demonstrate continuously flawless performance.

## 2.2. Characteristics of the B2B Market

“Business marketers serve the largest market of all; the dollar volume of transaction in the industrial or business market significantly exceeds that of the ultimate consumer market.” (Hutt, Speh, 1989) B2B markets differ in many ways from consumer markets (on overview of the differences between business and consumer demographics can be found in Appendix I: Business vs. Consumer Demographics). The business market consists of three broad sectors: commercial enterprises, institutions, and the government. (Hutt, Speh, 1989) Usually, these markets are characterized by a **smaller number of buyers** who buy **larger quantities** and the value of orders is often significantly higher than in the consumer market. Furthermore, customers differ greatly, it is often hard to discern which differences are important and which are trivial for developing a marketing strategy. Frequently, the same industrial products also have multiple applications. (Shapiro, Bonoma, 1984) It is important to note that B2B markets

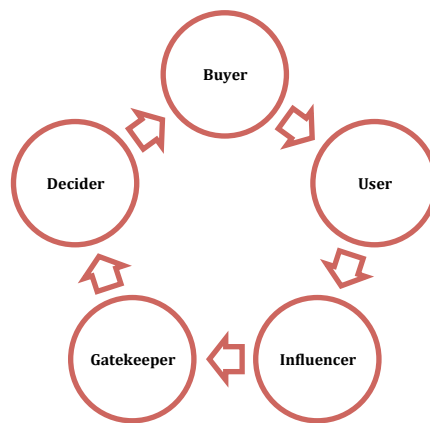
have a **more complex decision making unit** and the target audiences here are made up of **groups of constantly changing individuals** with different interests and motivations and whose choices might be limited by organizational segmentation criteria. (Choffray, Lilien, 1978) Consequently, it is crucial for B2B marketers to have a high level of expertise and a good understanding of the target audience. Because buyers in the business market are **more rational** than consumers, building up trust and security is key for any industrial company that wants to be successful. Brand, reputation and other factors, which convey reliability, are also essential. Likewise, **sales personnel** play an extremely significant role in B2B marketing. Often, higher investments into staff are required and less extensive spending needs to be accounted for other promotional activities. This is also due to the fact that **personal relationships** are more valuable than in the customer market. B2B markets are furthermore characterized by more complex products, which often need explanation and expertise. The **information search** and decision-making process is typically longer than in the consumer market and the **evaluation criteria** for the purchase vary. In B2B, the criteria usually are price, value and/or utility, whereas in the consumer market social factors and personal preferences are more decisive. (Ellis, 2010) Overall, one can say that B2B markets are more demanding. However, the buyers mostly are also more predictable than clients in the consumer market. (Harrison, Hague, 2010)

More details about industrial market segmentation will be emphasized in later sections of this paper, here it is to be mentioned though, that B2B markets typically have fewer behavior or needs-based segments than is the case with consumer markets. Roughly speaking, those segments mostly can be lowered down to a price-focused segment, a quality and brand-focused one as well as a service-focused and a partnership-focused segment. Challenging, however is, to obtain a precise understanding of what the segments are and identifying which companies belong to which segments is extremely difficult. (Harrison, Hague, 2010)

### 2.3. B2B Decision-Making Units

Unlike in consumer markets, in the B2B environment, “decisions are made in a complex system influenced by a wide range of stimuli.” (Growth Perspective, 2011) As has been mentioned before, the B2B organizational buying process generally involves more people in what is known to be a “buying center” or a decision-making unit (DMU). Often, a large number of people is involved in a decision-making process. Members of this DMU could belong to many different functions within the organization, e.g. purchasing, finance, marketing etc. Figure 1: Buying Decision Process summarizes the different parties that the buying center could be comprised of. Members of the buying center assume different roles throughout the procurement process; they may be users, influencers, buyers, deciders, and gatekeepers. Vital to understand is that one person could assume all roles in a purchase situation, or each individual could assume a different buying role. (Hutt, Speh, 1989) Consequently, the DMU can be a very complex organizational phenomenon.

**Figure 1: Buying Decision Process**



*Source: adapted from ManagerTool, B2B-Marketing Definition, own design*

Buying organizations are characterized by the **type of the organization** (e.g. manufacturing firms, educational institutions or governments), **organization demographics** (e.g. number of employees, sales volume, industry affiliation, etc.), **type of the buying institution**, the **degree of source loyalty** and similar factors. It is important to pay attention to the composition of the buying center, the amount of time pressure felt by members of the buying center and the degree of decentralization of a company. Characteristics of individual decision participants are demographics (age, education, job experience), their organizational role, psychographics (personality traits + lifestyle), preferences and their buying criteria. (Webster, 1979)

For the selling firm, it is of outmost importance to understand the composition of the DMU and to tailor its marketing efforts accordingly. One should try to reflect the individuals' interests as well as serve the overall group dynamic. It should be clear that it is very likely that the individuals' interests within a DMU differ and thus tradeoffs have to be made – a buyer might for example pay special attention to a low price, whereas an influencer might prefer to focus on superior product quality. Normally, the buying center is a fluctuating, informal group of people. The fact that members of the DMU frequently vary over time makes approaching them even more complicated and intensive care and communication is therefore the key to success. (Ellis, 2010)

Summing up, it can be said that in order to penetrate the business market effectively, the marketers should understand the organizational buying process, which is affected by multiple buying influences, technical specifications, time lags and complex buying motives. (Hutt, Speh, 1989) Throughout the segmentation process, also it should constantly be recalled that the B2B market differs in many ways from B2C industries and effort should be placed upon understanding the decision-making unit and its composition at any time.

### 3. Segmentation Theory

*"A meaningful segment is any group of customers that meets three criteria: they are identifiable by common characteristics, they are profitable, and they are growing."*

*(Grover, B., Evergreen Consulting)*

Marketing experts and researchers widely agree that segmentation is the underlying basis for every marketing and business strategy because it is rarely possible to satisfy everyone in a market. In the following, the results of an extensive literature review on the topic of segmentation will be presented with the aim of generating a better understanding of the underlying principles. First, a short overview over the historical background of the concept of market segmentation will be given, the term will be defined and its purpose as well as advantages and disadvantages will be highlighted. Afterwards, specifics of industrial market segmentation will be mentioned and challenges of market segmentation will be examined. This section shall serve as a basis for understanding the segmentation methods and tools that will be presented in the next section of this thesis. It is to be noted that the findings on B2B market segmentation are very few; therefore, many concepts presented here will be related more to B2C. For the purpose of understanding the main idea behind market segmentation, referring to B2C is worthwhile, but it will always be tried to draw a connection to the applications for the B2B market 3M is operating in.

#### 3.1. Historical Evolution of Market Segmentation

Nowadays, companies are aware that customer needs always have to be kept in mind when producing and marketing goods and it has been realized that the heterogeneity of those needs cannot be ignored. Therefore, today, "Market segmentation is an essential element of marketing in industrialized countries." (Wedel, Kamakura, 2001) In the past, however, mass production and marketing were common and firms' strategies were manufacturing-oriented, focusing mainly on reduction of production costs rather than satisfying customers. As production processes became more flexible and consumers' demand was more diversified, firms realized that they could gain a competitive advantage when tailoring products more to the needs of certain groups of customers. Clearly, the first efforts to market segmentation mainly referred to the B2C market. "As market-oriented thought evolved within firms, the concept of market segmentation emerged." (Wedel, Kamakura, 2001)

Very little is to be found about the origin of industrial market segmentation. It is to be assumed that the concept begun in the B2C market and after recognizing the tremendous success there, it started to find applicability also in B2B. Many writings are dated around the late 1970s, so that was the time when industrial market segmentation became most popular.

In the early phases, companies used very simple segmentation approaches, mostly orienting themselves on demographic and geographic variables. This behavior resulted from the limited availability of logistical possibilities and warehouses or other means to store goods. Furthermore, capacities were often fully exploited so that the question of expansion did not even come up. (Crone, 1977) However, around the early 1960s consumers were becoming less predictable in their buying behavior. “Many people without much education had become affluent; others with sophisticated tastes had become very price conscious.” (Yankelovich, Meer, 2006) Marketers thus realized that purchasing patterns no longer aligned with age and income and therefore purely demographic segmentation lost their power to guide company’s decisions. Resulting from this, companies tried to differentiate themselves from competitors and in order to attract the right group of people, market segmentation become necessary and was widely accepted. Often, however, price differentiation was the main tool for B2C segmentation. (Crone, 1977) Later, strongly influenced by Arnold Mitchell’s discovery of the Values and Lifestyles program (VALS), psychographic variables became an important and accepted tool for market segmentation. VALS place consumers into one of eight segments, namely Innovators, Thinkers, Achievers, Experiencers, Believers, Strivers, Makers and Survivors. (Machková, Král, Lhotáková, 2010) Also benefit segmentation has been discussed extensively in literature and is thus considered a key concept. Benefits are the sum of product advantages or satisfactions that meet an individual’s needs or wants. Consequently benefit segmentation describes the grouping of consumers on the basis of their attributes that satisfy specific needs. (Machková, Král, Lhotáková, 2010) Unlike VALS, benefit segmentation is an appropriate base for both consumer and industrial markets that is widely used today.

Although business marketers use segmentation to more efficiently market and sell products, many companies lack a structured approach towards segmentation until today and a great amount of decisions is still based on gut feeling or simple firmographics such as industry type, size and usage. (Berrigan, Finkbeiner, 1992) Unfortunately, it will be seen later in this analysis that also 3M is no exception in this regard.

### **3.2. Definition of Market Segmentation**

The term “segment” origins in Latin and means “part” or “layer”. (Baum, 1994) Wendell Smith first introduced the expression “market segmentation” in 1956 by stating: “Market segmentation involves viewing a heterogeneous market as a number of smaller homogeneous markets, in response to differing preferences, attributable to the desires of consumers for more precise satisfaction of their varying wants.” (Smith, 1956) Even though many slightly amended definitions have emerged after Smith, the essence of his explanation is valid until today. Therefore, a market segment can be defined as “a group of consumers that are alike based on some characteristic(s)” (Czinkota, Hoffmann, Dickson, Dunne, Griffin & others, 2000) and a firm’s target market consequently is a specific group of customers toward which a firm directs its market efforts. Furthermore, target marketing means matching a specialized marketing

mix with the needs of a specific market segment. (Czinkota, Hoffmann, Dickson, Dunne, Griffin & others, 2000) Clearly, these first definitions mainly referred to the B2C market, however, they are applicable for B2B as well and no real distinction can be found for defining industrial market segmentation. In other words, market segmentation is about dividing a market into homogeneous groups by the help of predefined segmentation criteria, enabling thereby the satisfaction of the heterogeneous needs of the members of the submarkets through the help of differentiated marketing strategies. The main underlying assumption is that the market is composed of individuals/companies that have different needs and expectations. (Beck, 1997)

It is important to understand that segments do not need to be physical entities that naturally occur in the marketplace, but are defined by researchers and managers to improve their ability to best serve their customers. Expressed differently: “market segmentation is a theoretical marketing concept involving artificial groupings of consumers constructed to help managers design and target their strategies.” (Wedel, Kamakura, 2001)

Significant to note is that segmentation, like marketing itself, is all about the profitable satisfaction of customers’ needs. “It is designed to be a practical tool, balancing idealism against practicality and coming up with a solution that maximizes profit.” (Hague, Harrison, 2010) Also, through the choice of certain segments, marketers are choosing a competitive environment and thus it has to be evaluated whether the company can handle the competition in the segment they are about to decide upon. (Hutt, Speh, 1989)

The above-mentioned description of the B2B market has pointed out differences between the consumer and the industrial market. Especially due to the fact that decision-making units are more complicated in B2B, it can be said that also **market segmentation is even more complex** and complicated in **industrial markets** than in consumer markets. However, it is at least as useful since all the advantages that will be listed below still hold true. Besides, industrial segmentation can assist companies in the analysis of the market, selection of key markets and the management of marketing. “Industrial market segmentation clearly is not the total answer to effective marketplace performance, but it is a necessary, and often critical, component of theory and practice.” (Bonoma, Shapiro, 1983)

In the past, industrial customers have only been categorized as users, original-equipment manufacturers, dealers and distributors. For strategic purposes, however, this classification does not cut deeply enough and today one has realized that a more sophisticated segmentation scheme is needed in order to group customers into homogenous groups according to the way they buy and use the product. (Corey, 1976) One of the most important points in industrial marketing is to select relevant segmentation bases. The next chapter of this paper will go more into detail explaining various segmentation methods and approaches. Special emphasis will be placed upon the identification of suitable segmentation bases.

### 3.3. Importance and Purpose of Market Segmentation

Until now, it should be understood that market segmentation is a key for success for any company, whether operating on the B2C or B2B market. The definition of a market, which results from segmentation, serves as a basis for the development of a company's **mission and vision statement**. These statements are highly valuable tools for strategic (marketing) planning. Moreover, in order to **win customers**, companies must clearly understand the presegmented markets in which they compete and this should happen prior to designing target market strategies. (Weinstein, 2004) Ideally, companies should aspire "toward market and customer ownership." (Weinstein, 2004) Subsequently, distinctive **business opportunities** will be detected easily. Weinstein (2004) points out: "it is better to control a majority of a well-defined market sector (be the big fish in a small pond) than to have a small share of a broad market (be the small fish in a giant lake)". This statement underlines the importance of top-of-mind awareness, which is only guaranteed in the first case.

Furthermore, a firm segments its markets so that it can respond more effectively to the wants of groups of prospective buyers and thus **increase sales and profit**. (Berkowitz, Kerin, Rudelius, 1989) Good market segmentation contributes to a **full understanding of the market**, the ability to **predict behavior** accurately, and increased likelihood of detecting and exploiting new market opportunities and the identification of groups worth pursuing. "A good segmentation solution will result in segment members that are as similar as possible within the segment and as dissimilar as possible between the segments." (Tuma, Decker, Scholz, 2011)

In summing up, it can be said that market segmentation is an integrated concept fulfilling two main objectives: identifying homogenous groups within a heterogeneous market and tailoring products or services to the specific needs of these particular consumer groups. Accordingly the reasons for market segmentation are higher profits, identification of growth opportunities, targeted communication and the ability to better serve customer needs and wants. (The Manager, 2012)

### 3.4. Advantages and Disadvantages of Market Segmentation

An important advantage of market segmentation is that it provides a definition for further market analysis and thus a **better understanding of customers** is generated. As a result, the development and implementation of a marketing mix that is tailored to specific needs of the market becomes possible. Furthermore, it **aids in assessing potential demand for products** that has not been realized before. Another important benefit of market segmentation is the **identification of competitors** and competing products in the market, which is strongly facilitated through segmentation. The benefits of market segmentation also include the creation of barriers for competitors because, logically, thus it also becomes easier to develop responsive competitive positions. (Simkin, 2008) The **increased likelihood of sales effectiveness and cost efficiencies** in

reaching the market are further gains that should not be underestimated. Also **positioning** turns out to be easier and more precise if it is based on the assessed needs and preferences of consumers in the target market. When the market is segmented, **identifying opportunities** for future growth or innovation is simpler. (Czinkota, Hoffmann, Dickson, Dunne, Griffin & others, 2000)

Unfortunately, market segmentation also brings along several disadvantages; foremost relating to **cost increases**. As a matter of fact, targeting multiple markets instead of only one generally increases marketing costs. Moreover, the **number of products is likely to increase**, again resulting in rising costs. Overall, it should be noted that each step in the process of personalizing is costly. Furthermore, it has to be considered that in case a company should unintentionally overly segment a market into too small niches, this might have a negative effect on the consumers. Another difficulty is that market segmentation will certainly result in a shortcoming if it is performed under **stereotyping** and generally, it has to be said that regrettably stereotyping is often proliferated by market segmentation. (Czinkota, Hoffmann, Dickson, Dunne, Griffin & others, 2000)

### 3.5. Challenges for Market Segmentation

A first challenge that marketers face when trying to segment a market (no matter if B2C or B2B) is that it becomes increasingly difficult to define precisely where an industry begins and ends. “Realize that markets develop from existing, emerging and even imagined business opportunities.” (Weinstein, 2004) This is the reason for which it is no longer enough to segment the market according to some general characteristics, instead “richer, more comprehensive market definitions are desirable; an integrated, multidimensional view of the market is advocated.” (Weinstein, 2004)

To be useful to marketers, segments have to be significantly different from one another and sufficiently large. It is also important, and sometimes challenging, that segments are accessible through communication and distribution channels (this might be more challenging on the B2C level, however, also for industrial market segmentation accessibility should be considered). Sometimes identification might be very difficult or even unfeasible. (Wind, Cardozo, 1974) The art of market segmentation therefore lies in the efficient grouping of customers into manageable segments so that it makes sense from a cost/benefit perspective. Each of these segments should then be served with a specialized marketing strategy that is feasible and likely profitable. (Wind, Cardozo, 1974)

Even though it is the purpose of market segmentation to group customers into segments in order to achieve a better concentration and a smaller target group, this might as a matter of fact result in decreased potential because some consumers are not attracted anymore and are neglected in the company’s strategies. Contrary, a wide segment with little concentration can sometimes be more successful, because it incorporates many



customers at a time. (Freter, 1983) The challenge, therefore, lies in defining the right size of the segments.

Moreover, a suboptimal choice of market segments can lead to substantial marketing expenditures being spent on the wrong segment. Dolničar and Lazarevski (2009) observed that the “lack of understanding of how segments are derived typically leads to overestimating the validity of the segmentation solution.”

Another challenge to market segmentation is the constantly changing environment and along with customers’ attitudes and preferences. “Segmentations are viewed by too many of their sponsors as one-time, go-for-broke efforts to provide a comprehensive portrait of customers that can inform all subsequent marketing decisions.” (Yankelovich, Meer, 2006) When doing it accurately, segmentation should be an ongoing process and it has to be dynamic.

An important feature of effective market segmentation is that it can be used to gather information not just about advertising opportunities but also product innovation, pricing and the choice of distribution channels. Often, however, marketers fail to gain these important insights. One reason for this is that too much attention is often put to psychographics – or in case of industrial market segmentation firmographics. Without a doubt, psychographics (or firmographics respectively) are important to capture some truth about people’s (or companies’) lifestyles, attitudes and self-image, but it fails at predicting purchase behaviors. By focusing too extensively on people’s identities, marketers often get distracted from the product features that matter most to current and also potential customers. Because of this, these criteria are also not sufficient to identify new groups of clients, the ones that have recently been underserved and they moreover cannot be used for price determination. (Yankelovich, Meer, 2006) Yankelovich and Meer point out that psychographics are not the drivers of people’s commercial activity. Much more relevant, according to the authors, are purchasing history, product loyalty, and a propensity to trade up because these traits lead consumers to view particular offerings differently. Clearly, Yankelovich and Meer’s study focuses more on the B2C market, however, the challenge resulting from their findings is equally applicable to B2B because it lies in finding patterns in the customer’s actual buying behavior and using those for a meaningful segmentation strategy. In order to gain access to this crucial information, the authors recommend data collection on emerging social, economic and technological trends. Qualitative research exploring underlying motives and needs of customers is essential. With the help of this data, companies would then be able to indicate potential sources of revenue, identify consumers’ values and beliefs, accommodate or even anticipated changes in markets or consumers behavior. (Yankelovich, Meer, 2006) To sum up, this is predominantly a problem of finding the right segmentation bases and criteria, a challenge that will be treated in more detail in the next section of this paper.

Further, it should be realized that segmentation might not necessarily be the right approach in each situation (e.g. due to cost barriers or due to the impossibility to

identify further profitable segments if a market is already saturated). Before engaging in market segmentation, a company always has to analyze the question whether a segmentation approach is the right tool for solving the question at hand and whether its benefits will outweigh the costs. (Kaiser, 1978) Generally, however, experience has shown that market segmentation can indeed often be a solution for identifying new customer segments and serving customers' needs better.

## 4. Methodologies of Market Segmentation

*“How useful a segmentation study is to decision-making is determined to a great extent by the effort that goes into careful planning and design of the study.” (Donald Scotton)*

As the quote by Donald Scotton indicates, it is absolutely necessary for a company to carefully consider available segmentation methods, the choice of the right segmentation model, various sample designs and the tools for collection of data as well as its reliability. Market segmentation requires careful planning and balancing of pros and cons of various segmentation techniques and methodologies. In order to evaluate 3M's current segmentation approach and suggest areas for improvement, first of all, a glance into theory is indispensable again. In the following, diverse segmentation methods will briefly be introduced before the importance of precise definition of segmentation bases will be stressed. Subsequently, several approaches to identifying relevant segmentation criteria will be contrasted and evaluated, and data collection methods and sampling procedures will be touched upon.

Unfortunately, research that focuses specifically on industrial market segmentation is very rare and a sole concentration upon it would limit this study tremendously. In the following, it is therefore tried to investigate segmentation approaches that can be used both for B2C and B2B markets and an attempt will always be made to point out the relevance for industrial markets since this is of utmost importance for 3M.

### 4.1. Segmentation Methods

Numerous segmentation methods exist and it is impossible to analyze all of them in detail. Nevertheless, in the following it will be tried to give a rough overview and mention the most distinctive factors between the existing techniques. Segmentation methods commonly involve extensive use of various statistical approaches. However, for the context of this analysis, it is not necessary to dig deeply into the statistical background of defining segments, therefore, it is just mentioned here for the purpose of completeness, yet, statistics will not be analyzed in further detail in the course of this thesis.

Firstly, segmentation methods can be either of **descriptive** or **predictive** nature. “Descriptive methods analyze the associations across a single set of segmentation bases, with no distinction between dependent or independent variables” whereas “predictive methods analyze the association between two sets of variables, where one set consist of dependent variables to be explained/predicted by the set of independent variables” (Wedel, Kamakura, 2001). In other words, this means that descriptive methods analyze interconnections within one set of variables, predictive techniques, on the contrary, analyze interconnections between two sets of variables viewing one set as a group of depended variables which have to be predicted by the other set.

Secondly, the type of a segmentation method used depends on a segmentation model that is to be chosen. Mainly, segmentation models can be divided into **a-priori** and

**post-hoc** approaches. The first one refers to the determination of type and number of segments before data collection and the latter one refers to the identification of segments on the basis of the results of data analyzed. Generally, post-hoc approaches are found to be more powerful and useful than a-priori segmentation procedures. A **hybrid** form, meaning a combination of both forms, is also possible. (Wedel, Kamakura, 2001)

## 4.2. Market Research and Data Collection

Before any segmentation strategy can be carried out, an attempt to collect information has to be made. Without obtaining a lot of knowledge about customers, it is impossible to cluster them into different groups. It should be noted that choosing an inaccurate approach to gather data could have an immense influence on the result of the whole segmentation project and can easily lead to wrong answers. (Burns, Bush, 2003) “A valuable tool throughout the research process but particularly in the problem/opportunity identification stage is secondary data – data previously collected for any purpose other than the one at hand.” (McDaniel, Lamb, Hair, 2006) **Secondary data** offer tremendous cost and time savings and should thus be considered first. Sources of secondary data in the context of market segmentation include trade journals, business indexes, directories, statistical sources and computerized databases. (Weinstein, 1987) However, for most segmentation studies, it will be necessary to also collect **primary data**, which in fact often is the most relevant source of information. Therefore, the next step is to analyze the situation in the market and the behavior of the customers more precisely and to tie it together with the already won knowledge from the first part.

An important first step in the data collection process, especially with regards to industrial market segmentation, is the gathering of all records in one document. “The starting point of any business-to-business segmentation is a good database.” (Hague, Harrison, 2010) This list should obviously contain facts like a company’s contact details as well as their purchase histories. Ideally, it should also hold the contact facts of the people involved in the decision-making process. It is to be noted, though, that in reality it is very challenging to keep this information up-to-date. The most demanding part, however, lies in the identification of company’s individual needs. Hague and Harrison recommend questionnaires followed by statistical tools like factor and cluster analysis in order to obtain such information. (Hague, Harrison, 2010) Generally, it can be said that questionnaires are the tool that is most often recommended in literature for primary market research in industrial market segmentation. (Baum, 1994) Other research procedures are picked as a central theme in the following section.

Behavior segmentation dimensions such as firmographics, product usage and benefits are all customized projects demanding specific search for a given situation. (Weinstein, 1987) To attain the required information of the customers, secondary data is not helpful anymore, because now information is needed that has not been collected before. This

means that new data has to be generated. There are different approaches that can be used to arrive at the required primary data (current, tailor-made data, which is composed especially for a problem that has to be solved). The basic data collection options include face-to-face and telephone interviews, direct mail, focus groups and observation methods. In case of 3M, this would mean that the data could best be collected during a company visit on their customer's premises through conversations and interviews with them. Weinstein (1987) states that in many segmentation studies, a combination of primary and secondary data will be used with multiple data collection methods and forms applied for information gathering.

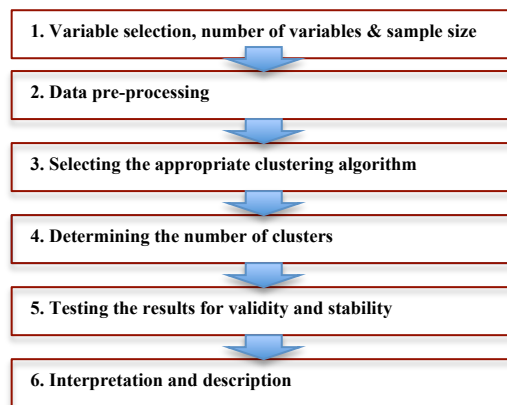
### 4.3. Sampling Procedures

The previous assessment has shown that gathering information about customers is an inevitable first step if they are later to be divided into segments. Usually, it is impossible to conduct research that really involves the whole market. Due to time and cost reasons, segmentation analysis is almost exclusively done in form of sampling and often, complex multivariate statistical-mathematical methods are applied. (Bauer, 1977) There are two broad sampling categories: **nonprobability** or **probability samples**. Nonprobability samples are the easiest and least expensive to use and they include convenience, judgment and quota samples. Probabilistic samples are more objective and more difficult to administer and thus also more costly. Random, stratified, cluster and systematic samples belong to this group. (Weinstein, 1987)

It is beyond the scope of this study to refer to all segmentation methods known, therefore, focus will be placed upon the most common, post hoc method: **clustering**. "Clustering analysis is a convenient method commonly used in many disciplines to categorize entities [...] into groups that are homogeneous along a range of observed characteristics." (Wedel, Kamakura, 2001) In other words, cluster analysis seeks to identify homogeneous structures in data by analyzing the similarities or dissimilarities of the objects to be clustered. The main characteristic of clustering is that it simultaneously draws on all variables in order to build groups. (Beck, 1997)

Once those groups are formed, the researcher can focus attention on a small number of groups rather than the large number of original entities. Market segmentation and clustering are closely related to one another, but the concepts are not identical. Clustering is to be understood as a method of market segmentation. (Liu, 2007) The most important steps of the clustering process proposed by Tuma, Decker and Scholz (2011), in order to reach a robust and valid segmentation solution, can be seen in the graphic below.

**Figure 2: Stages in the Clustering Process**



*Source: adapted from Decker, Scholz (2011), A survey of the challenges and pitfalls of cluster analysis application in market segmentation, own design*

Clustering is a descriptive statistical method which itself can be divided further into several other methods like overlapping, non-overlapping, fuzzy techniques, etc. Cluster analysis is in fact not a single practice, but encompasses a relatively wide variety of procedures that attempt to form clusters. (Gordon, 1980) Additionally there exist several predictive methods, but again more specific knowledge about those is not required for the understanding of 3M's current approaches and thus they will not be treated further in this thesis.

#### **4.4. Segmentation Bases**

Careful selection of both segmentation bases and methods is crucial to the effectiveness of a segmentation study in providing useful input for strategic management decisions. However, the definition of those variables that will serve as a basis for segmentation is very hard. Depending on the segmentation bases, different features of the customers are described. It is highly recommended to use more than one segmentation basis in order to take advantage of the benefits of the distinct bases. (Böhler, 1977)

A segmentation basis is defined as “a set of variables or characteristics used to assign potential customers to homogeneous groups” (Wedel, Kamakura, 2001) or, in Webster's words (1979): “Segmentation variables are customer characteristics that relate to some important difference in customer response to marketing effort.”

The variables that will be chosen should lead to segments that meet three criteria. First of all, it should be **measurable** meaning that it has to be possible to determine the value of the segment with justifiable efforts. Secondly, it is important that the variable is **relevant** for a substantial amount of customers. This signifies that the segments generally have to consist of a large number of customers (in industrial marketing, sometimes an exception might apply in such a way that one customer is large and significant enough to form his own market segment) in order to make separate marketing activities for each segment reasonable. Thirdly, the chosen segment should

have **operational relevance** for the marketing strategy. In order for this to apply, customers within a segment have to be highly homogenous but heterogeneous from the ones outside of this segment so that it clearly makes sense to attract the segment with a differentiated marketing approach. (Webster, 1979) Furthermore, it is often mentioned that the final segments need to be **accessible** and **feasible**. This means that processes for accessing the segments (such as certain types of media) have to be existent and advantages have to be drawn from approaching distinct segments with different marketing tactics. Also, the criteria should be **applicable for a longer period of time** because market segmentation strategies are designed in a long-term perspective. (Baum, 1994)

It should be noted that when it comes to the definition of segmentation bases, a distinction between consumer and business markets has to be made. This is mainly due to the differing buying behavior in industrial markets. Markets can be segmented according to different types of information. Many different approaches to segmentation variables exists, very generally speaking, the following six are most common for **industrial markets: segmentation according to the industry, geography, size of the company, operational characteristics, purchase strategy and behavioral criteria**. (Machková, Král, Lhotáková, 2010) Unimportant for this study, but for the purpose of completion, the ones for the consumer market should be mentioned as well. The variables here are: geographic, demographic, socioeconomic and psychographic segmentation as well as segmentation according to lifestyles and values. Ordinarily, one also distinguishes between **physical attributes** (geographics, demographics and socioeconomics) as well as **behavioral attributes** (psychographics or firmographics, product usage, benefits and other behavioral dimensions). (Weinstein, 1987)

As mentioned before, because of the fact that the buying-behavior in industrial markets consist of several interacting individuals in a decision-making unit (compare the section on B2B Decision-Making Units on page 18), the methodology and the specific variables used for segmentation must also be different from consumer market segmentation. “Industrial segmentation at the minimum should recognize that customers are organizations, that the decision-making unit is a group of individuals interacting within the context of the formal organization’s structure and that these individuals occupy unique roles that are major influences on their behavior.” (Webster, 1979) Therefore, the above-mentioned criteria of buying centers are influencing the segmentation process to a great extent.

#### 4.5. Segmentation Approaches

For the purpose of this study, the right selection of segmentation criteria is crucial; therefore, more emphasis will be drawn towards this topic. In the following, different approaches to the selection of useful criteria will be given that go beyond the general findings mentioned above. The aim is to introduce some of the most recognized

methodologies in order to then develop a suitable segmentation strategy for 3M in the next step.

As has been pointed out when talking about the history of market segmentation (compare page 20), in the past, companies have often solely relied on demographic segmentation. Nowadays, researchers agree that focusing on one segmentation criteria only is not enough and that markets should be analyzed from different perspectives – including, but not merely focusing, on demographic segmentation. Other differences between customer groups like usage patterns, values, motivations or preferences should be scrutinized and it is clearly visible that those factors have to be linked to demographic correlation. Therefore, it is important to understand that “we are not dealing with different types of people, but with differences in peoples’ values.” (Yankelovich, 1964) Respectively for the B2B market this would again mean a more precise focus on company’s attitudes, their buying behavior and values.

Most segmentation approaches fall into one of the following categories: segments based on the characteristics of the buying organization or ones based on the decision-making process in buying organizations. (Sudharshan, Winter, 1998) Various approaches exist for creating market segments, including survey-based quantitative studies of consumer behavior, ad hoc qualitative approaches such as intuitively interpreting sentiments expressed during customer focus groups, to the macro-micro evolution to newly defined segments based on assessing existing customer groupings or classifications. (Simkin, 2008) In the following, some of the methods that have been referred to by several other researchers and thus enjoy a certain reputation in the field of market segmentation will be introduced. It should be noted that certain publications are rather old, however, in more recent literature, experts refer back to the ancient writings and constantly claim that these findings are – at least partly – still valid until today. Also, it goes beyond the scope of this study to analyze all methods in detail, it will therefore be tried to just capture and summarize the most important findings of each.

#### 4.5.1. Frank, Massy and Wind’s Segmentation Criteria Approach

Frank, Massy and Wind, a relatively old but still leading reference on market segmentation, classify segmentation bases into **general**, meaning independent of products, circumstances or services and **product-specific**, relating to both the customer and the product service and/or particular circumstances, bases. (Frank, Massy & Wind, 1972) Furthermore, there typically is a distinction of whether bases are **observable** or **unobservable**. (Wedel, Kamakura, 2001) The table below provides an overview of the resulting classifications.

**Observable general** criteria have been used for a long time, especially in the early applications of market segmentation. These variables are relatively easy to collect, reliable and usually stable over certain periods of time. **Observable product-specific** bases relate to buying and consumption behavior of consumers. Features like brand



loyalty, stage of adoption and usage frequency are counted towards this basis. It is to be noted that even though originally these variables have been used for consumer markets, they can also be applied to business markets. (Wedel, Kamakura, 2001) These data can be obtained from survey, household or store scans. **Unobservable general** bases are used almost exclusively for consumer markets and therefore, a detailed description is not relevant for this paper. For the purpose of comprehension, this basis has been mentioned here but no detailed analysis will follow. **Unobservable product-specific** bases, on the other hand, are commonly used for both consumer and business markets and they mainly refer to consumers' perceptions of brand attributes and elasticities. Important to note is that in modern market segmentation studies, a variety of bases may be combined. (Wedel, Kamakura, 2001)

**Figure 3: Classification of Segmentation Bases**

	General	Product-specific
Observable	Cultural, geographic, demographic and social-economic variables	User status, usage frequency, store loyalty and patronage, situations
Unobservable	Psychographics, values, personality and lifestyle	Psychographics, benefits, perceptions, elasticities, attributes, preferences, intention

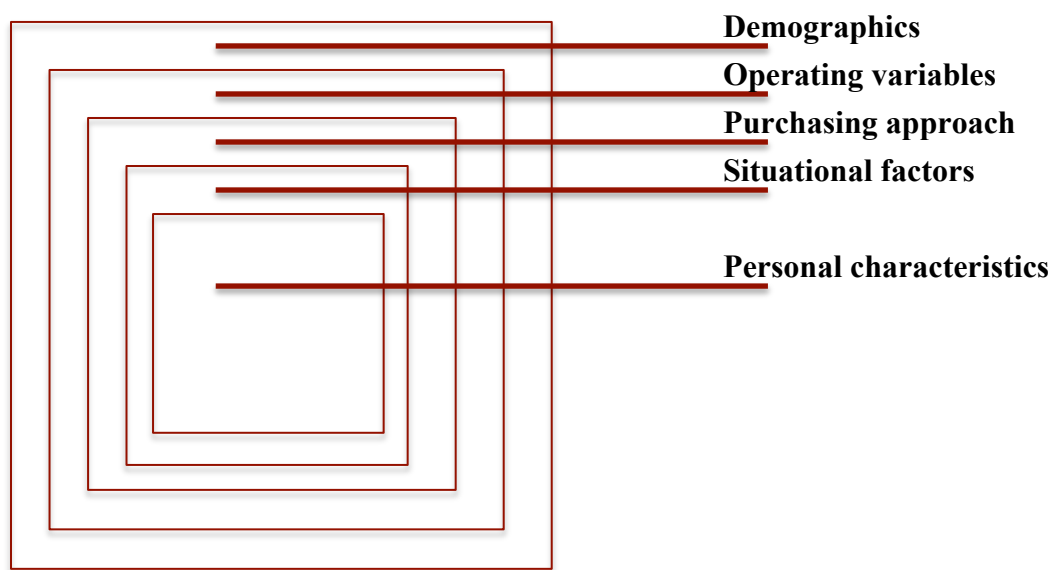
*Source: adapted from Wedel, Kamakura, 2001, Market Segmentation, own design*

Clearly, the model as presented above is applicable mainly for the B2C market. However, if besides cultural, geographic, demographic and social-economic variables, also firmographics (traits of an organization) would be counted towards the first group of observable general criteria, the theory suddenly becomes valid for industrial market segmentation as well. "Firmographics are to large organizations as demographics are to people." (Focus, 2010) Relevant especially for the US market, **Standard Industrial Classification (SIC)** is a popular form of firmographic segmentation. "SIC codes are an exhaustive set of business categories created by the US Office of Management and Budget to reflect the economic activities of all business and government agencies in the United States." (Berrigan, Finkbeiner, 1992) The coding involves eleven broad industry divisions, which are then further subdivided into multiple branches. SIC codes are a convenient segmentation tool, because the codes reflect the nature of businesses and thus allow for conclusions about the company under consideration. Coding mechanisms similar to SIC exist for most industrialized countries. Not only specialized books on market segmentation but also literature on general marketing principles refer to SIC codes as the main methods for industrial market segmentation. (Gaedeke, Toetelaian, 1983) It will later be seen that such industrial classification codes, which divide industries into sub-industries, are also especially relevant for 3M and the company's segmentation processes. Consequently, Frank, Massy and Wind's model indeed contributes to a great extent to B2B market segmentation approaches and it will later be shown that it is applicable for 3M's segmentation strategy as well.

#### 4.5.2. Shapiro and Bonoma's Segmentation Criteria Approach

Shapiro and Bonoma (1984) have identified **five general segmentation criteria**, presented in a nested form, which are especially suitable for industrial market segmentation. Moving from the outer nest toward the inner, these criteria are: **demographics, operating variables, customer purchasing approaches, situational factors, and personal characteristics of the buyer**. The criteria range from those easily observable to those difficult to detect. A visualization of this approach can be found in the graphic below.

**Figure 4: Nested Segmentation Approach**



*Source: adapted from Shapiro and Thomas, 1984, How to Segment Industrial Markets, own design*

**Demographics** is the first criterion and the authors point out that it should be treated as such – many companies only segment according to demographics which is likely to result in insufficient outcomes. Demographics are the most general segmentation criteria and it is easy to obtain. It gives a broad description of the company and includes industry, company size and customer location. **Operating variables**, the next layer in the nested approach, include technology, user/nonuser status and customer capabilities (operating, technical and financial). These criteria enable a more precise identification of existing and potential customers within demographic categories and are usually rather stable. **Purchasing approaches** are one of the most neglected but valuable methods of segmentation and include the formal organization of the purchasing function, the power structures, the nature of buyer-seller relationships, the general purchasing policies, and the purchasing criteria. The next feature of the nested approach is **situational factors**. Now, the focus no longer is on the grouping of customer companies, but on the role of the purchase situation. Situational factors resemble operating variables but are temporary and require a more detailed knowledge of the customer. Included here are the urgency of order fulfillment, product application, and the size of the order. Buyers' **personal characteristics** constitute the last layer of the

approach. These data are less visible and furthermore expensive and difficult to gather because they included information such as buyer-seller similarity, buyer motivation, individual perceptions and risk-management strategies. (Shapiro, Bonoma, 1984)

Overall, it can be said that the authors propose this hierarchical structure because it is perceived as being easy to use and it is possible to systematically work from the outer nest to the inner one. However, not all characteristics necessarily have to be gathered. A healthy balance between the easily available data from the outer nests and the more difficult ones in the inner nests are recommended. (Shapiro, Bonoma, 1984) The concept is very handy and its beauty lies in the applicability for both B2C as well as B2B markets. When referred to in the B2B context, one should just pay attention to firmographics instead of demographics; all other layers can be used as recommended by the authors. It is to be agreed, however, with the authors' warning that this approach cannot be applied in a cookbook fashion but needs to be adapted to individual situations and circumstances. (Shapiro, Bonoma, 1984) This results in the shortcoming that no clear guidelines are given that can simply be applied to 3M's situation.

#### 4.5.3. Wind and Cardozo's Two Stage Segmentation Approach

The two professors Wind and Cardozo propose yet another approach that consists of two stages. The first stage involves formation of **macrosegments** based on characteristics of the buying organization and the buying situation. In the second stage, those macrosegments are then further divided into **microsegments** based on characteristics of decision-making units. With the help of this hierarchical approach, an initial screening of organizations, which potentially could offer attractive market opportunities, becomes possible. Thus, also early elimination of non-useful companies can take place and, moreover, total research effort and costs can be reduced.

Research is **relatively easy and cheap** due to the availability of **secondary data** that can be used in the **first stage** in order to determine key organizational characteristics such as organization type, size, usage rate, location etc. The suitable criteria vary from company to company can be selected as needed. As can be seen, **macrosegmentation** is generally concerned with **non-behavioral** segmentation variables.

On the **macrolevel**, it can be useful to partition the market by **size** of potential buying organizations. "Large buying organizations may possess unique requirements and respond to marketing stimuli different from those responded to by smaller firms." (Hutt, Speh, 1989) Another possibility is the recognition of regional variations and thus it might be useful to apply **geographic segmentation** criteria. Yet another alternative macrolevel variable is **usage rate** where buyers are classified in a range from non-user to heavy-user. Nevertheless, it should be noted that it is sometimes problematic to draw a clear distinction between the classifications. Also, the **purchasing situation** can be taken into account because first-time buyers clearly have different perceptions and information than repeat buyers. Finally, the **structure of the procurement function**

can serve as a macrolevel characteristic. “Firms with a centralized purchasing function behave differently than those with decentralized procurement.” (Hutt, Speh, 1989) The degree of buyer specialization, criteria emphasized and the composition of the buying center are thus influenced. (Hutt, Speh, 1989)

Once the macrosegments have been identified, they can further be narrowed down into **microsegments** based on additional measures that relate to purchasing behavior. Segmentation variables defining microsegments are **behavioral variables** characterizing buying centers and their members. (Webster, 1979) The authors recommend that information for the second stage should primarily come from a company’s **sales force and market research studies**. It should be noted that obtaining data about microsegments is more difficult than gaining information about macrosegments. (Webster, 1979) The output from the firm’s segmentation model should then induce a key dependent variable (based on the particular marketing problem which is to be solved), e.g. the bases for segmentation, and a set of independent variables which allow marketers to predict where along the key dependent variable a particular group of potential customers may lie, as well as provide more information about the key characteristics of the segment. (Wind, Cardozo, 1974) In other words, within a certain macrosegment shaped by non-behavioral factors, microsegments might be defined by the composition of the buying center, buying criteria used etc. Even though microsegmentation can clearly add more valuable insights to the research, it has to be noted that sometimes segmentation processes become too sophisticated when microsegmentation is applied. (Webster, 1979)

Criteria used for **microsegmentation** include product quality, prompt and reliable delivery, technical support, price and supply continuity or standards of supplier profiles that appear to be preferred by decision makers, e.g. quality, delivery, price etc. Microsegments can be formed on the basis of **purchasing strategies, the structure of the decision-making unit, the importance of purchase and attitudes towards vendors**. (Hutt, Speh, 1989)

Especially the variables that should be used for microsegmentation have been reviewed and amended by many different authors and researchers after Wind and Cardozo. It has been recommended to include factors such as **buyers’ decision-making styles** (Wilson, 1971), **industry concentration ratios** and **product customization** (Laughlin, Taylor, 1991) and **benefit segmentation** (e.g. Perrault, Russ, 1976). Often, microsegments are perceived to deliver the most valuable data to researchers, however, their potential to strategy development in industrial marketing is likely to be limited. “There are serious concerns in practice regarding the cost and difficulty of collecting measurements of these micro-segmentation characteristics and using them.” (Sudharshan, Winter, 1998)

Later, also Choffray and Lilien (1978) added some ideas to the existing framework by Cardozo and Wind. They recommend paying attention to interorganizational variation in the involvement pattern by the help of a decision matrix measuring the involvement in the buying process. The idea is to conduct a survey and have each respondent

indicate the percentage of task responsibilities in each phase of the decision process associated with each participant category. In the next step, the authors recommend using cluster analysis to identify groups of organizations that are homogenous in the composition of their buying center. Herby, new insights into the assessment of which individuals in an organization are most likely to become involved in the purchasing process for a specific industrial product are obtained. With the help of this, marketers will be able to tailor their marketing strategies more precisely to the key individuals involved. (Choffray, Lilien, 1978) The proposed outline of the recommended matrix can be found in the graphic below.

**Figure 5: Buying Decision Matrix**

Choffray and Lilien / Industrial Market Segmentation

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Decision Participant Categories	Phases of Purchasing Decision Process	Description of Phase 1	...	Description of Phase n
Decision Participant Category 1				
⋮				
Decision Participant Category m				

Figure 1 Outline of a Decision Matrix

Source: Choffray, Lilien, 1978, *A New Approach to Industrial Market Segmentation*

To sum up, the two-stage framework proposed by Wind and Cardozo contains several advantages in comparison to other approaches and seems to be relatively easily applicable. Among the main benefits are the low costs and relatively simple ways for obtaining data. Many researchers have referred to this approach and approved its validity. More sophisticated ways have been tried in order to determine individual decision makers and buying center. Important is that this approach recognizes that “industrial behavior is a unique combination of individual motivation and decision making behavior and organization decision processes in the context of formal organization structure, task, and technology.” (Webster, 1979) What this means is that this approach advocates the recognition of the importance of including additional variables that relate to the organization. These variables can include, as has been shown, characteristics of the buying organization (such as number of employees, industry affiliation etc.), characteristics of the buying center (such as composition, stages etc.) and characteristics of individual participants (e.g. demographics, psychographics etc.). It will be seen in later sections of this paper that a lot of important information and learning can be drawn from this model for 3M’s Industry and Transportation department, too.

#### 4.5.4. Alternative Approaches

Generally, it has been found that many authors in the field of market segmentation refer back to the above-mentioned approaches and consider them to be valid. They clearly are the most relevant ones and only slide amendments have been made by other writers, nevertheless, no totally different article has emerged that would introduce a new, diverse concept. However, some researchers criticize parts of existing theories or add new thoughts. Some of those considerations will now briefly be introduced.

Norman Barnett, for example, claims that the whole concept of market segmentation should be replaced by **product segmentation** in order to make up for the failures that result from current market segmentation approaches. The author proposes a shift from the emphasis on primary marketing from “whom to reach” to “what characteristics should be built into the product.” According to him, more concentration should be placed upon the consumer him/herself by focusing not on consumers as statistics (as it has often been the case with traditional segmentation methods, according to Barnett), but on their perceptions of the unique characteristics that differentiate one brand from another. Brand characteristics play a key role in Barnett’s concept of product segmentation, because product segmentation segments by perceived product or brand characteristics and thus enables marketers to more precisely predict brand shares. The author continues his evaluation by stating that traditionally used concepts such as demographic analysis or segmentation according to social structure or usage patterns “may be helpful for identifying market potential, but it appears too insensitive for prediction specific brand choice.” (Barnett, 2001) According to Barnett, product segmentation could be a useful answer to overcome those obstacles. It should be noted that Barnett exclusively refers to the consumer market; he does not mention the implications of his new approach for the B2B market. (Barnett, 2001) Implications for the B2B market can nevertheless be drawn from Barnett’s findings. For industrial market segmentation, this would mean that one cannot solely rely on firmographics, other variables have to be taken into consideration, as well. Products should be adapted to meet customers’ needs and the customer therefore has to be put into the center of attention.

Another theory that suggested an amended approach to traditional segmentation theories already emerged in 1979. **Countersegmentation**, the concept proposed by Resnik, Turney and Mason (1979) still seems to be valid today, taking into account low-cost airlines for example. The three professors suggest that extreme segmentation of markets might not always be the best option for each industry, instead aggregating or clustering market segments (instead of separating them) might sometimes be more relevant. It is to be noted that this concept is recommended for both consumer and industrial markets. The authors claim that “consumers are increasingly willing to accept products less tailored to their individual needs if substitutes are available at a lower cost.” (Resnik, Turney, Mason, 1979) Firms could thus react to changes in customers’ preferences regarding price consciousness, for example, and pursue this countersegmentation strategy by either dropping products for some market segments or offering less

differentiated products to the customers. Clearly, this strategy cannot be adapted randomly to every company, it has to be wisely decided if the concept of countersegmentation can be applied and if the risks of e.g. lost markets or lower sales are not too big for the firm under consideration. The key is to cut production and marketing costs for the company while passing some of these savings on to the consumers in form of lower prices. Conjoint analysis is referred to as a useful statistical tool to pursue countersegmentation because it makes it possible to analyze simultaneously the utility of various combinations of product and price variations. This strategy is likely to work because it is found that a noteworthy number of customers place higher importance on a low price than on convenient or personalized products. (Resnik, Turney, Mason, 1979)

More recently, some researchers like Sudharsan and Winter (1998) refer back to the concept of **derived demand** (compare p. 17), recognizing that companies should try to gain a more complete understanding of those organizations to which they sell. Companies should therefore pay attention to customers' strategies and consider those in their own development of segmentation schemes and strategic moves in general. The authors also point out the need to carefully survey and track behavior of secondary consumers of the product. (Sudharsan, Winter, 1998)

It has to be said that even though the alternative approaches mentioned above all contain some relevant and fresh thinking, clearly they have not attained the same level of acceptance among other researchers as the authors referred to before. Furthermore, these methods are vague, do not point out specific measures to be undertaken and often it is not even possible to determine clearly whether they are designed for the B2C or B2B market. For the purpose of inclusiveness, they were mentioned here, also to show that there are other authors that are less famous who have spent time thinking about the concept of market segmentation, but they will not find much application in the actual recommendations which will later be given for 3M's Industry and Transportation department.

## 5. Frameworks for Industrial Market Segmentation

*“In contrast to merely providing a framework from which to view general kinds of questions, market segmentation can be adopted as a structured approach to decision-making.”*  
(William Wilkie)

After having understood the central role of segmentation variables or bases, it becomes now crucial to grasp the segmentation process as such. Which steps do companies have to undertake to define market segments? Several authors discuss different procedures and in the following, some of the ones relevant for industrial market segmentation have been selected and will subsequently briefly be discussed. Afterwards, the most important findings will be summarized and contrasted.

### 5.1. Market Definition Framework by Weinstein

Art Weinstein proposes a framework, which is especially suitable for segmentation of B2B markets. He points out that “A market definition too narrow limits potential opportunities; one too large leads to mass-marketing thinking and can make an organization's efforts and resources seem almost insignificant.” (Weinstein, 2004) The main idea of this approach is a blending of customer needs, customer groups, competition, products and technologies. The framework consists of **three levels: relevant market, defined market and target market**.

The first step is to adequately **define the relevant market**, meaning the appropriate market for an organization given its resources, objectives and environment. Here, the following factors should be taken into consideration: **geographic**, **generic** (consideration of various and diverse marketing opportunities), **relevant** (more precise definition than generic market, yielding realistic boundaries to guide management operations of the business) and **product** (list of goods, services and ideas the company has available for sales) **components**. Weinstein (1987) states that when setting research objectives, it is aimed at answering the following question: “What are you trying to accomplish in the research project?”

The second level, the **defined market**, is a more precise description of the previously portrayed relevant market. An assessment of the current customer base as well as untapped customers (new prospects) has to be performed. In the end, the market definition factors in **annual growth rates**, **minimal acceptable sales thresholds**, **anticipated servicing levels** and similar features.

At the third level, segmentation bases will be applied to the “presegmented” market definition in order to **identify groups of customers with similar characteristics**. (Weinstein, 2004) Weinstein (1987) points out that not every market is segmentable, some markets might not be feasible to pursue from a marketing perspective. In order to check for the segmentability of a market, it should be evaluated whether the market can be **rated** relative to other markets, whether it is **realistic** in size and if customers can be



easily **reached** as well as whether customers will **respond** to marketing initiatives (**4Rs**). These 4Rs are an important contribution by Weinstein that should be kept in mind for further segmentation analysis.

## 5.2. Structured Approach to B2B Segmentation by Laiderman

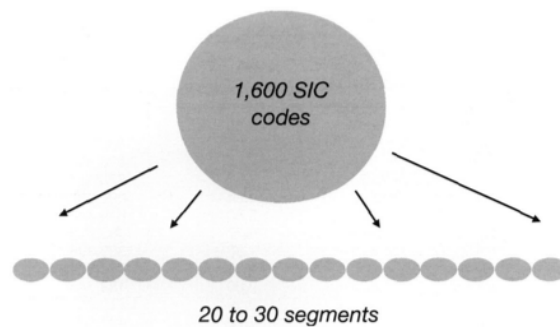
Another, very detailed and comprehensive framework has been developed by Jim Laiderman (2005) with the aim of providing guidelines that help companies to develop strategic plans and targeted programs which enable improved sales performances. In order to achieve a structured approach to segmenting internal as well as external business information resources, the author proposes a **four-step framework**. Firstly, it is important to develop a clear understanding of the goal, then data which is relevant for achieving the objectives should be defined and prepared before the so-called modeling stage takes place. In the fourth phase, applications are defined. (Laiderman, 2005) Following, these four stages will be described in more detail.

1. **Understanding of goals and objectives:** Laiderman recommends setting up a meeting with every department that will be utilizing the segmentation system. Each person should define expectations towards the segmentation structure. Expectations are likely to vary from department to department and it is important to recognize the different needs and to be aware of them. The main outcome of the first phase is the formation of a **project team** and a formal **project plan** outlining goals, tasks, owners, deliverables and timelines. (Laiderman, 2005)
2. **Defining and preparing the data that play into the goals:** In a next step, the existing customer **database** needs to be analyzed for completeness and relevance. Laiderman (2005) points out: “Data preparation is the single most important element of success in developing an effective B2B segmentation system.” Important information to be included in the database are addresses, phone numbers, etc. It should be noticed that the important criteria vary from industry to industry.
3. **Modeling** is the third steps of Laiderman’s framework. Here, he recommends the use of a **demand multiplier**. “The essence of the multiplier is captured in the question: ‘How much is a single employee at a certain type and size of business worth to your organization?’” (Laiderman, 2005) It is to be noted that large and small businesses should not be mixed in the same segmentation definition in order to give a strong meaning to the multiplier.
4. The following and last step is **framing**. Laiderman stresses that there are many ways to frame a segmentation system, size class being one of the most common contexts here. Another option is to define frameworks based upon demand potential through the usage of SCI codes. All existing customers would be summarized in terms of the total value of a volumetric figure divided by the total

number of employees at all those businesses within the dataset. Frames should be designed by what makes statistical sense and in terms of how an organization views the world. It is important that every customer in the dataset falls somewhere in the framework matrix. (Laiderman, 2005)

5. **Developing a small number of meaningful segments** is the next area in Laiderman's framework. "The technique used to create segments is a method of data reduction that groups businesses based upon customer penetration." (Laiderman, 2005) Laiderman also points out that one should not develop segments by product or service but rather focus on studying behaviors within the segments via profile development. Figure 6: Determination of Segments visualizes this approach once again.

**Figure 6: Determination of Segments**



*Source: Laiderman (2005), A Structured Approach to B2B Segmentation*

In summary, Laiderman's approach mentions a few useful ideas and concepts such as working together on the segmentation task in a group and using SIC codes for determination of segments. In many ways, however, the author is not very specific and it is thus difficult to recognize concrete action steps. Also, this framework focuses extremely on applying the multiplier, unfortunately, how to do that is again not precisely explained.

### 5.3. Framework for Industrial Market Segmentation by Doyle and Saunders

Doyle and Saunders proposed yet another framework in 1985. Just as much of the other literature reviewed here, this source is relatively old, but it stills seems to be relevant until today and many researchers refer to it. The following seven steps are recommended:

1. **Defining objectives:** Quantitative and realistic goals have to be defined by management of an organization. Market share objectives are especially important because they highly influence segmentation. Depending on this, e.g. a niche strategy or one attacking main competitors might apply.

2. **Determine market segments:** The authors do not point out how to specifically arrive at the segments, but it is mentioned that segmentation should take place according to different variables. Furthermore, situation specific variables are perceived more relevant than general customer characteristics.
3. **Evaluation of attractiveness of alternative segments:** Now it is proposed to evaluate the defined segments according to their opportunities. It should be tried to determine growth rates and competitors' strategies and approaches. Also, firms should not forget to match requirements with their own technical, marketing and financial capabilities.
4. **Selection of target markets:** In the next step it becomes important to develop differentiated marketing strategies tailored to specific market segments. These segments should now be defined in a meaningful manner.
5. **Development of a positioning strategy:** In order to successfully compete in the predefined target segments, a positioning strategy that aims at achieving a competitive advantage and that is different from those of competitors but yet sustainable should be created.
6. **Development of the marketing mix:** Decisions on product design, technical support, service, channels, distribution, promotion and pricing have to be made.
7. **Validating the Strategy:** In order to arrive at a strategic plan, the previous steps of the strategy have to be validated. Therefore, market research has to be performed and it should be ensured that the findings are reliable.

To summarize, it can be said this framework's main advantage is its focus on positioning and that it is relatively easy to understand. Also, it can clearly be seen that some points, such as the focus on defining objectives and developing a market mix for the segments, are similar or the same to some of the other frameworks mentioned above. Furthermore, one of the main findings is to concentrate on competitors and to use statistics for determine segmentation criteria. However, a crucial shortcoming of the above mentioned framework is that it does not provide more evidence on how to actually achieve all these steps. Instead, it continues with a real-life example that has no relevance for 3M or the industry the company is operating in. Therefore, it does not make sense to elaborate on this application here.

#### 5.4. B2B Sectorization Framework by Simkin

Another framework is proposed by Lyndon Simkin (2008) with the goal of closing the gap that he perceives to exist in B2B market segmentation where, according to the author, marketers often use little more than trade sectors or product groups as the basis

for their market segmentation and customers' characteristics and buying behavior are often neglected in practice. Simkin's framework consists of the following six steps:

1. **Convening the team:** Simkin recommends forming a workshop with cross-functional and cross-hierarchical team members and he claims that this is important in order to generate acceptance across the whole organization. It is absolutely crucial to also include sales managers in this first step, because they have the best knowledge of the customers since they work with them on a day-to-day basis.
2. **Description of current customers groups:** The current customer groupings should be listed in the second stage in whatever way they are classified so far (e.g. according to sectors, product groups, geographic territories, sales volumes etc.). Further factors that could be used for classification are company size, production methods, specializations, the departments concerned, where the companies are in the value chain and their legal status. (Millier, Palmer, 2000)
3. **Analysis of the customer characteristics and buying behavior in each group:** All members of the workshop should share their insights about customer characteristics and their buying behavior. Often, the comprehensions by the workshop participants are sufficient and no additional research needs to be performed.
4. **Proliferation of the number of distinctive customer groups:** Customer profile characteristics including the **composition of the buying center** and **key customer values or needs**, the **buying process** and **influencing factors** should be noted down precisely and so-called buying proformas should be the result. For inspiration and better understanding of the concept, please find an example of a buying proforma for the airline industry in Appendix II: Example of a Buying Proforma. Segments should be split up until every workshop participant agrees on the grouping in the customer profile section. Once there is agreement on the customer groups based on the customer profile, buying center and needs, the team should examine the buying decision-making process of the agreed set of customer types and the influencing factors to ensure there genuinely are no differences within each group's customers. Further division of segments might be necessary in order to achieve this condition.
5. **Re-aggregation of the customer groups to form market segments:** Common traits across the many different proformas should be identified and customers should be grouped accordingly into segments.
6. **Selection of segments to target and develop marketing programs:** The last step focuses on prioritization. Due to limited company resources, it is normally impossible to attract all resulting segments. Clear positioning and appropriate marketing mix strategies must then be formulated for each segment to be

targeted. Sales and marketing personnel should be especially helpful for this part of the framework since they know the customers best. As a result, customers should be grouped together “irrespective of the customers’ industry sector, products, location and existing allocation of the corporation’s sales staff”, resulting in the most appropriate segments for the company and appropriate sales and marketing programs can easily be composed for the target segments. (Simkin, 2008)

Simkin’s approach is useful because he has understood the importance of including behaviors and attributes of targeted customers into the segmentation strategies. Customers eventually share similar needs and buying behaviors, irrespective of their commercial sectors. The company thereby benefits from the real purpose of market segmentation, namely grouping of customers with similar needs and buying behavior. Furthermore, “other marketing analysis, such as the marketing environment, competitor arena and capabilities, are required in order to help the organization select the market segments on which to focus its sales and marketing muscles.” (Simkin, 2008) To be noted negatively again is that Simkin also does not give any clear guidelines on how to perform each of the suggested steps.

### **5.5. Comparison of the Frameworks**

The previous section of this thesis introduced several of the existing frameworks for industrial market segmentation. Unfortunately, it seems as if none of them is perfect in delivering a tool that can immediately be utilized for the market segmentation case of a specific company. All methods proposed lack details explaining how to precisely achieve the suggested steps. However, several learning outcomes can be drawn from each.

First of all, it is noticeable, that some common features appear in all frameworks. Every author proposes working on the segmentation project as a team. Also, in whatever way advocated, they all recommend moving from a ‘bigger picture’ slowly to segments that are defined in more detail. This also includes that they agree upon the fact that more than one segmentation variable has to be used and that behavioral as well as non-behavioral characteristics should be considered. Furthermore, each expert reminds the reader of the importance of stating objectives and goals before engaging in the segmentation process and an organized database is always the starting point. In order to reach a reliable collection of customer data, information has to be gathered first. Only if sufficient knowledge is available, can customers be clustered in groups with similar characteristics. Customer groups should be described as detailed as possible taking into consideration many different features. Next, all researchers propose to check the selected segments for their attractiveness, meaning that a cost/benefit analysis should be performed which tests if it makes sense from a financial viewpoint, to attract the chosen groups through different marketing concepts.

What differs from framework to framework is the focus the authors determine. Doyle and Saunders, for example, place a greater importance on the usage of the segmentation outcome for positioning than the other writers. Also the utilization of statistics differs. While Laiderman focuses extremely on the application of a multiplier that should be determined through clustering, others, like Weinstein, seem to not include any statistical calculations into their framework at all. Doyle and Saunder's work, on the other hand, focuses more on positioning, even though again no details are given on how to proceed exactly. Besides, Weinstein points out that his framework includes competition as well – none of the other frameworks does. While the other authors do not mention any measurement criteria at all, Weinstein also highlights that not every market is segmentable and in order to validate for segmentability, he recommends checking it for whether it can be rated, is realistic, can be reached and will respond.

To sum up, it is impossible to nominate one “best” framework for solving the segmentation issue at 3M's Industry and Transportation department. As will be seen in the actual application in a later part of this paper, each framework offers useful portions that can and will be used in one way or the other, but none can be applied as it is (mainly also due to the reason that no author gives enough details for implantation and they all talk on a rather general level).

## 6. Summary of the Most Important Research Findings

*“Segmentation-based strategizing is at the heart of value creation“*

*(Business development VP of a global IT service business, Simkin, 2008)*

This part of the master thesis aims at briefly summarizing the most important discoveries from the literature review and theoretical findings presented above. First of all, it should have become clear that market segmentation is a very important tool for marketing and strategic planning and its importance and influence should not be underestimated. Market segmentation can be a tremendous help for companies to tailor products and services to the specific needs of particular consumer groups. Through segmenting the market, firms are likely to achieve higher profits, identify growth opportunities and understand and serve customers better. Even though some drawbacks have been stated, all in all, advantages outweigh disadvantages. Still, one would be mistaken assuming that market segmentation is easy – it is in fact a very challenging task and profound planning is essential.

Since 3M is operating on the B2B market, special attention was paid towards industrial market segmentation and it has been pointed out that the distinction between consumer and industrial market is indeed necessary due to several reasons. B2B marketing is concerned with other businesses as customers and the concept of derived demand leads to buyer-seller interdependence. A crucial difference, furthermore, is the complexity of the buying center where frequently several individuals are involved in the decision-making process. To put it in a nutshell, one can say that even though consumers in the B2B market might be more demanding, it is generally also easier to foresee their buying behavior.

Over the years, segmentation has become more and more difficult because consumers became less predictable in their attitudes. Several methods of market segmentation have evolved as a consequence, but they all agree in at least one point: market segmentation has to be profitable and “[...] any apparent segmentation benefits need to be weighed against the costs of achieving them.” (Dibb, Wensley, 2002)

Usually, it is possible to gather some data that is needed through secondary research, but in most research projects it is indispensable to also collect primary data. One of the most difficult tasks in industrial market segmentation is to select relevant segmentation bases. The criteria for useful segmentation bases are that they are relevant, measurable, accessible, feasible and timely. Moreover, the main distinction is between physical attributes (geographics, demographics and socioeconomics) as well as behavioral characteristics (for example psychographics, product usage, benefits, composition of the buying center etc.).

Many different approaches to market segmentation exist and only some have been presented in this paper. They all have in common that every single author recommends the use of more than one segmentation variable instead of relying on only one.

Referring to industrial coding schemes has been recommended in order to work with observable general criteria such as geographic and demographic variables of companies. Further, Shapiro and Bonoma's idea to work from the outside in through using a nested approach might be very helpful because due to this, different criteria are touched upon and the risk to oversee some important features is minimized. Also the differentiation between macro- and microsegments clearly is supportive for meaningful segmentation. This way, secondary and primary data are linked and behavioral as well as non-behavioral variables are considered.

The frameworks for market segmentation that have been discussed previously were all slightly different from one another, but any one could serve as a valid segmentation guideline for a company. What can be learned is that segmentation is best approached in different steps, each lowering down crucial information about the segments so that in the end a clear definition of groups, which are homogenous inside a segment but heterogeneous towards all other segments, is the result.





## PART III: APPLICATION

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After having gained a good comprehension of the theoretical background of market segmentation and the frameworks that are suggested by various authors, it is now important to apply these concepts to the actual situation of the Industry and Transportation department of 3M Česko. The next section of this paper will deal with concrete recommendations for finding segments and identifying segment parameters and it will be tried to establish a system of unified segmentation processes.

In order to do so, first, the contemporary segmentation practices have to be understood and analyzed and they will therefore be explained in this part of the thesis. Current systems will be described, their strengths and weaknesses will be pointed out and areas for improvement will be shaded. The second part will describe the research methodology and highlight results of the interviews that have been conducted with 3M sales and marketing managers.

### 7. Analysis of Current Segmentation Procedures

*“If the status quo came carbonated in a can, I’d shake things up.”* (Jarod Kintz)

Currently, the main responsibility with regards to segmentation of the Industry and Transportation Department at 3M Česko is put on to the **marketing and sales managers** of the sub-divisions. Noticeably, the emphasis is placed on needs-based segmentation and so far, descriptive characteristics have not been taken into account to a great extent and no combination of several characteristics occurs in a conscious manner. It is to be mentioned that the concrete outline of how segmentation is done is left to decide upon to each manager himself and it is his responsibility to decide whether to apply any segmentation at all and to develop a segmentation scheme for his division accordingly. So far, there is mainly one device used for capturing segmentation essentials: the CEE Planning Toolkit. Additionally, one has undertaken first steps towards a more descriptive approach and an Industry Code Conversation Table has therefore been created. Both instruments will now be introduced and analyzed.

#### 7.1. CEE Planning Toolkit

The main marketing device that 3M is using throughout the Central and Eastern Europe (CEE) region is the so-called **CEE Planning Toolkit**. This standardized tool allows for business planning analyzing the company and market situation from different perspectives (compare Figure 7: CEE Planning Tool for an overview of the different fields to be filled in). For the purpose of this paper, the market segmentation approach is of course the most relevant instrument and the one that will be paid most attention to. However, marketing is a complex undertaking and it is, therefore, regarded very

positively that 3M is concerned with the different areas (such as a competitor analysis, channel mapping, sales outlook or a business SWOT) and performs detailed investigation in each aspect.

Market segmentation and its purpose is defined in the 3M CEE Planning Toolkit as follows: “To define the broad structural market segments for your business and summarize the defining characteristics of those segments, to define the broad solution needs that customers in those segments have, and identify which segments have which solution needs. This exercise will help you to create the "profile" of your target segments, which lead to best fitting strategy (pricing, channel product, promotion) resulting in a competitive advantage.” (3M data, CEE Planning Toolkit) As can be seen, this description captures the purpose of general market segmentation well. It does, however, not give any explanation on how this segmentation should be done. As a result, market segmentation is understood and undertaken differently in each division. On a first sight, this might seem ineffective, however, taken the broad product portfolio and its application in various industries into consideration, it becomes logical. Still, from the CEE Planning tool, it can already be realized that the segments across the I&TB department vary greatly and there is no standardization to be seen.

**Figure 7: CEE Planning Tool Overview**

Business planning	Situation analysis	Business Directions	Ready
		Business SWOT	Ready
		Market segmentation	Ready
	Business & market analysis	Competitor analysis	Ready
		Channel mapping to segments	Ready
		Market Segment SWOT	Ready
		Product portfolio analysis	Ready
		Key account analysis	In progress
	Strategy & program development	Growth Program hopper	In progress
		Program RWW prioritisation	Ready
		Operational goal tree	Ready
	Financial plan	5 Years sales outlook	Ready
		Business financial plan (P&L)	Not started
	Marketing Mix	Product strategy	Ready
		Place strategy	Ready
		Price strategy	Not started
		Promotion mix	Ready
		Activity calendar	In progress
		Control Plan	Not started

Source: 3M company data, CEE Planning Tool

When trying to identify strengths and weaknesses of this current system, above all the reliance on gut feeling rather than on actual market data has to be named as a main shortcoming. It is clear that all data filled into the CEE Planning Tool cannot be sustained by reliable sources and as a result, it is heavily based on estimates. The instructions of the tool describe the purpose of market segmentation, but give no guidance with regards to how to segment and how to define priorities in the enormous

market that 3M is serving. Potential for improvement of the documentation of market segmentation approaches can thus clearly be seen and will be discussed in later sections.

## 7.2. Industry Code Conversion Table

One has realized that it could be helpful to pay more attention to actual market data and that this should be included into the process of segmenting markets, as well. Therefore, a workshop was conducted with representatives of all divisions in order to identify the most significant industries or ‘segments’ throughout the Industry and Transportation department. The overall aim was to define relevant descriptive parameters for segmentation based on industry codes that can be retrieved from external data and that are applicable for all divisions. It has been decided to mainly refer to Global Insight. Global Insight is a tool for country and industry forecasting. This database “covers the world’s industries with unparalleled expertise, market perspectives, and global analysis.” (Global Insight, 2012) The problem is that at the moment little attention is paid to such external sources and furthermore, relevant industries differ greatly among the divisions. In order to establish a unified segmentation approach across all departments, priority industries had to be identified. The next step was to create a conversion table where the European NACE (French origin: Nomenclature statistique des activités économiques dans la Communauté européenne) codes were translated into the international ISIC (International Standard Industrial Classification of all Economic Activities) codes. The coding that is now used is based on ISIC version 3. NACE is the European classification, which allows for comparison of statistics and industry data across borders. Problematic is that these two coding schemes do not correspond ideally. NACE claims to be derived from ISIC but it is subdivided more precisely than ISIC. (Eurostat, 2008) Hence, conversion was necessary in order to ensure that in the future all undertakings at 3M will be based on one single set of coding (compare Customer Relationship Management systems on page 62). The result is a table that lists all industries and their ISIC as well as NACE codes where priority industries for the divisions (that have been agreed upon in the above-mentioned workshop) have been highlighted. Please refer to Figure 8: Extract of the Industry Code Conversion Table for an extract of the whole table on the next page for a better understanding of what has been done and what the conversion table looks like. The 15 priority industries can be found in this list as well.

Ultimately, the idea is to establish a segmentation system that consists of two levels. On the overall, company-wide level, companies would be assigned to certain industries (using the ISIC coding as a basis) and with the help of external data that can be retrieved from sources such as Global Insight (pointing out purchase behavior of industries) or Credit Info (for Czech companies), monitoring of industry trends and thus identification of potential revenue sources can become possible. Business developments and company behavior can be predicted with the help of these tools. Additionally, internal need-based segmentation should be conducted. Ideally, a system should be established that could be used by each division for this second-level, in-house

segmentation. Whether this is to be realized, or if it is not more realistic to conduct this second-level segmentation in each division individually, is to be verified in the following parts of this thesis.

**Figure 8: Extract of the Industry Code Conversion Table**

NACE 2	NACE 3	NACE 2 description	ISIC 3	ISIC 4	ISIC 3 description
C	10	Výroba potravinářských výrobků	D	15	Manufacture of food products and beverages
C	11	Výroba nápojů	D		Manufacture of beverages
C	16	Zpracování dřeva, výroba dřevěných, korkových, proutěných a slaměných výrobků, kromě nábytku	D	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C	18	Tisk a rozmnožování nahraných nosičů	D	22	Publishing, printing and reproduction of recorded media
C	20	Výroba chemických látek a chemických přípravků	D	24	Manufacture of chemicals and chemical products
C	21	Výroba základních farmaceutických výrobků a farmaceutických přípravků	D		Manufacture of pharmaceuticals, medicinal chemicals and botanical products
C	25	Výroba kovových konstrukcí a kovodělných výrobků, kromě strojů a zařízení	D	28	Manufacture of fabricated metal products, except machinery and equipment
C	26	Výroba počítačů, elektronických a optických přístrojů a zařízení	D	30	Manufacture of office, accounting and computing machinery
C	27	Výroba elektrických zařízení	D	31	Manufacture of electrical machinery and apparatus n.e.c.
C	28	Výroba strojů a zařízení j. n.	D	31	Manufacture of electrical machinery and apparatus n.e.c.
C	29	Výroba motorových vozidel (kromě motocyklů), přívěsů a návěsů	D	34	Manufacture of motor vehicles, trailers and semi-trailers
C	31	Výroba nábytku	D	36	Manufacture of furniture; manufacturing n.e.c.
F	41	Výstavba budov	F	45	Construction
G	45	Velkoobchod, maloobchod a opravy motorových vozidel	G	50	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
G	47	Maloobchod, kromě motorových vozidel	G	51	Wholesale trade and commission trade, except of motor vehicles and motorcycles

Source: 3M company data, Industry Code Conversion Table

To sum up, it seems as if a good first step towards a new segmentation approach, firstly relying on external data and using descriptive features, has been undertaken already. Emphasis should be placed on the second level (relating to need-based segmentation) and it is to be seen whether an overall concept for the whole Industry and Transportation department can be found or whether it is more recommendable to leave it up to each division to define relevant criteria there. Whatever the solution may be, rules should be established that set a precise framework for the suggested approach so that the execution for each employee will be facilitated.

## 8. Research Methodology

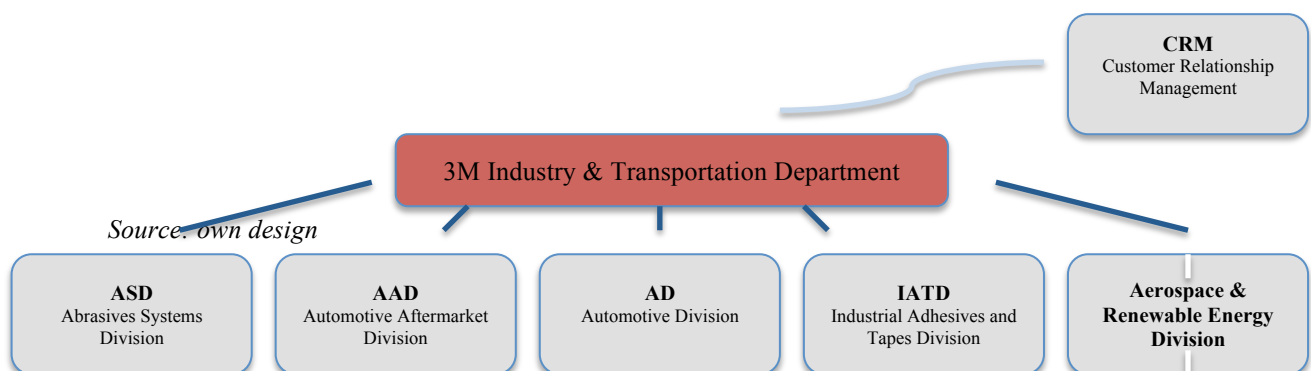
*"Not everything that can be counted counts, and not everything that counts can be counted."*  
(Albert Einstein)

The above-mentioned tools are the only written credentials that 3M Česko currently uses to document its segmentation attempts. As has been found in the first part of this thesis, market segmentation is a very important concept in marketing and it is therefore appropriate to assume that more could be done to improve grouping of customers at 3M. In order to grasp the needs of the different divisions and their attitude towards the topic under consideration better, information had to be gathered. The goal of the research is a diagnoses of the current status with regards to segmentation within the I&TB department of 3M. Further, the research outcomes were aimed to be used for developing recommendations for improvement. The following section will explain the research and data collection process that took place through the conduction of semistructured interviews. Main research outcomes will be highlighted and to ensure a better understanding, each division's status quo will be referred to in separate consideration.

### 8.1. Data Collection – Semistructured Interviews

It has been decided to conduct semistructured interviews with 3M managers responsible for marketing and sales of the five divisions of the Industry and Transportation Department in the Czech Republic. As mentioned before, the I&TB department consists of five divisions and the graphic below depicts this constellation graphically once again.

**Figure 9: Overview 3M Industry & Transportation Department**



For the interviews, sales and marketing managers of the ASD, AAD, AD and IATD divisions have been approached. Unfortunately, it was not possible to get hold of someone responsible for the Aerospace of Renewable Energy division. Because the idea to include CRM into the segmentation process as well had come up several times during the interviews, it has been decided to conduct an interview with the CRM manager as well, even though CRM is not actually a part of the I&TB department only, but serves on a company-wide basis.

The choice of semistructured interviews results from the fact that this form of qualitative data collection is conducted with a fairly open framework allowing for focused, conversational, two-way communication. General information to specific issues can easily be collected and insights can be gained. (FAO, 2011) “In semistructured or focused individual interviews, the interviewer attempts to cover a specific list of topics or subareas.” (Aaker, Kumar, Day, Leone, 2011) The interrogator can individually decide on the timing, exact wording and time allocated to each question and this open structure ensures that unexpected facts or attitudes can be pursued easily. Detailed questions do not have to be formulated ahead of time; the interviewer uses more general topics instead and creates the majority of questions during the interview. Thus, a lot of flexibility is given to both the person interviewing as well as to the one being interviewed, and discussions can easily arise. (FAO, 2011) “Semi-structured interviews offer topics and questions to the interviewee, but are carefully designed to elicit the interviewee’s ideas and opinions on the topic of interest, as opposed to leading the interviewee toward preconceived choices.” (Zorn, 2011) This mode of interrogating is especially recommended with busy professionals or leaders (Aaker, Kumar, Day, Leone, 2011) and it is sometimes referred to as the most common form of interviewing in the business environment. (West Lothian Council Psychological Services, 2010)

In case of 3M, semistructured interviewing is the optimal tool to use because it “confirms what is already known but also provides the opportunity for learning [and] often the information obtained from semi-structured interviews will provide not just answers, but the reason for the answers.” (FAO, 2011) The aim of the interviews was to understand the segmentation procedures at 3M, but also people’s motivation behind it, better. It was considered important that the interview has more of an informal character and is like a conversation and an exchange of ideas. The following areas were used as a frame for the interviews:

- Personal attitudes of the interviewees toward the current segmentation approaches used at 3M
- Recommendations for improvement
- Ideas for linkage between descriptive and non-descriptive segmentation criteria

A rough outline of questions was designed ahead of time (compare Appendix III: Potential Interview Questions), but it was stressed that the interview should be guided by flexibility towards each interviewee. During the dialogue, brief notes have been recorded and it was tried to follow up and elaborate on those immediately afterwards.

## 8.2. Evaluation of the Interviews

For convenience of analysis, the template of the questionnaire has been used for documenting the answers given during the interviews (compare Appendix IV: Interview Results where all interviews have been summarized). It is to be stressed, however, that these questions have not been asked directly, but all interviews took on the form of a conversation. For this reason, it should be realized that the answers documented in the appendix are by no means quotes of what was said, but they are meant to capture the essentials of the dialogues. As mentioned before, interviews were conducted with two representatives of the Abrasives Systems Division, two members of the Automotive Aftermarket Division, one employee of the Industrial Adhesives and Tapes Division and one of the Automotive Division as well as with a CRM specialist. Due to the extremely positive attitude and willingness to support the segmentation project of all questioned 3M employees, it happened that a lot of extra information surfaced during the interviews and several other topics were touched upon; the content of those can mainly be found in the last section “Impressions” of the interview summaries. Some of the most important outcomes will now be listed and it is tried to draw a connection between all departments and their attitudes towards the different topics.

When asked about the **importance** of market segmentation for 3M in general, all interviewees agreed that it is essential to divide the market into groups and that they are generally willing to support this process. Nonetheless, when concentrating on their own division, different opinions were registered. Both representatives of the **ASD** were convinced that segmentation is important for their division and needed due to the existing differences in customer needs and due to wide-ranging applications of their products (e.g. products that are used for metalworking can be utilized by the automotive industry as well as by jewelry producers – both groups would certainly apply the products in a very different context and it is thus important to understand their processes and related demands and implement them in the segmentation procedure). Also the representative of the **IATD** stressed the significance of market segmentation for his department, however, unlike in the ASD, finding the right segmentation criteria for adhesives and tapes seems to be a very challenging task. Interestingly, representatives of both the Automotive Aftermarket as well as the Automotive Division claimed that for their specific customers, segmentation is not absolutely needed and a much lower degree of importance was attached to the marketing tool. As will be seen when analyzing each division individually in the following section, the reasoning for the **AAD** was that the division is mainly concerned with paintshops and even though there exist many paintshops in the Czech Republic (approximately 1000 of them), they all have fairly the same needs and processes are rather similar. However, also for AAD, besides their core business of paintshops, segmentation would be needed for other focus groups of the division such as the General Industry. General Industry is a broad macrosegment within AAD at the moment and it urgently needs to be split up into microsegments and a useful approach should be implemented to determine how to do that. The answer given by the **AD** was that for a big part of their market, segmentation is not possible because the decision-making unit is not located in the Czech Republic

and it can therefore not be influenced by 3M Česko. However, updates should be obtained because the market is constantly changing and there might be potential that nobody is aware of at the moment.

When talking about **current segmentation processes** in place, big variations between the departments could be observed. It is to be stressed that none of the managers is satisfied with the approaches currently applied and none uses a specific database for industrial market segmentation, they all gather their data in Excel files only. However, the Abrasives Systems Division, for example, already has a rough concept that they are working on in place, and little is needed to finalize it so that the resulting segmentation approach would indeed be useful. Other divisions have not moved so far yet, but it should be considered that segmentation in their field might also be more difficult (as it is the case in the IATD) or less significant (in the AD and AAD, as explained above). In order to generate a detailed understanding of each division's situation, current approaches and potential for each department will be discussed in the subsequent section of this paper. First, it will be continued to list more of the factors where agreement across the departments could be observed.

Often it was stressed that segmentation is purely reliant on gut feeling and not based enough on actual market data. Accordingly, a requirement that was named by all departments in order to be able to consider and perform proper segmentation is that more **consumer insight** and market research is to be conducted. None of the divisions felt that they are informed well enough about their customers, especially not about their needs and attitudes. Current segmentation, in whatever way performed (if done at all), is mainly based upon intuitive feeling and it has been realized that this should urgently be changed. Generally, sales personnel was considered an important source and help in gathering information, since these 3M employees know the customers best. Even though writing down additional information after each visit means extra work for every sales employee, it would be the cheapest method to collect more insights and it was assumed that most sales people would be willing to do so. Critics said that they believe sales people are too biased and not trained enough to discover overall potential and that they would therefore prefer to either send a neutral person or, in the best case, go and perform the visits themselves in form of sampling. Generalization could then be drawn upon the observed behavior (within an industry, often companies behave similarly). Visiting a few more companies every year would lead to more precise estimates over time.

Each department is confronted with a different current state with regards to the research process, meaning that they have a varying level of available information about their clients. Some research about customers is performed in all departments but they are more or less satisfied with it and perceive it as sufficient or not. The individual analysis of each division will reveal more information about the current stage of information in each division. Shortly said, it seems as if AAD and AD have most information because they can clearly define big core segments, but information about other areas of interest is completely missing here. The ASD is still in the process of gathering more data but is



doing very well at the moment and gaining an insight into customers' needs is simply most difficult for IATD and this department is therefore probably interested the most in collecting more data and performing more market research.

Agreement was furthermore visible when discussing the **CEE planning toolkit** that 3M currently asks the head of the divisions to fill in once a year in order to facilitate marketing planning. All interviewees agreed that the toolkit is not very helpful for them and it is never referred to when making decisions about product, promotion, pricing or distribution. It was believed that it might be more supportive for 3M's management to get a general overview and this is why it was filled in each year. The entered data is mainly based on gut feeling (because in most cases, there is no market research available that could serve as a basis for analysis) and only slight adjustments were said to be made from year to year. It was appreciated, though, that 3M implemented a new, slightly amended and more detailed, toolkit that is to be used as of 2012. The feedback towards the new toolkit was much better, even though the managers yet lack experience with it, the first impression is that the questions asked here are more relevant. On the other hand, it is much more time-consuming to use, but one positively assumed that if filled in carefully and correctly, it could be more useful than the old one and could indeed help in making important strategic decisions. Still, it was stressed (especially by IATD which is the division with the biggest product portfolio where several products are not used only by definition) that also the new tool requires generalizations, which are often impossible or incorrect to make. Additionally, it was said that in order to fill in the tool correctly, presently lacking customer insight are absolutely essential (see above).

Besides the urgent need for more market data, **ideas for improvement** in the segmentation processes that were mentioned included the introduction of one segmentation system throughout the Industry and Transportation department and the combination of descriptive and need-based segmentation criteria. Only the Abrasives Systems Division had a rough concept how this could be working for their division, all others seemed to be rather without a direction, but stressed their interest in the solution of the problem.

### 8.3. Individual Assessment of Each Division

In the following, the most important insights gathered from the interviews with each division manager with regards to their current segmentation efforts will be summarized and evaluated for future potential. It is important to understand the **status quo of each department** since their segmentation attempts vary and research progresses differ from division to division as well. It is to be mentioned that **none of the divisions actually utilizes industry codes** (such as NACE or ISIC, please compare the previous chapters for more information) for segmentation purposes so far. Currently, mostly need-based segmentation is performed.

### 8.3.1. Abrasives Systems Division

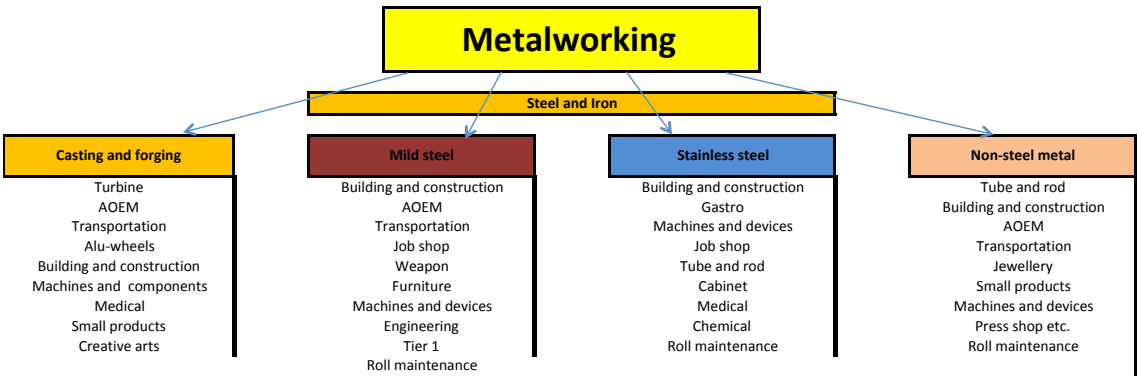
ASD has identified **four broad groups** that they are mainly focusing on: Automotive Original Equipment Manufacturers (AOEM) consisting of four customers in the Czech Republic only, Transportation (approximately 50 accounts), Automotive Aftermarket (partly the same portfolio as the AAD department) and the most difficult one to capture: the General Market. For AOEM a detailed **penetration matrix** exists (captured in an Excel sheet), listing all customers, their needs and other important information such as different departments where the product is used by the customer, product SKUs, the responsible person for the buying process, sales, margins, quantity sold and estimated future sales potential. This clearly is the most valuable set of segmentation criteria that is presently used by this division. Therefore, AOEM is not a priority for gathering more data at the moment, updates would need to be obtained eventually, but the current state is generally satisfying for this segment.

Furthermore, the division has one **demonstrator** visiting 400-500 companies in the market at the moment, who is very helpful in gathering more data and also information about competitors. No clear targets could be defined; everything that helps in understanding the customers better is helpful for 3M and therefore, all the data that could be gathered is then stored in simple Excel sheets or the penetration matrix if it relates to Automotive Original Equipment Manufacturers.

The problem with the above-mentioned four focus groups is that they are very wide-ranging and emphasis on **smaller segments** is hence considered to be necessary. Therefore, ASD has developed another, very interesting tool that is already in place in this division. It will further be referred to as “**first layer segmentation**”. Here, ASD has defined **four priority groups** for its division, namely metalworking, woodworking, rubber and plastic and glass and stone which are all further subdivided according to their **needs** and the **application area of 3M products** (e.g. metalworking is divided into casting and forging, mild steel, stainless steel and non-steel metal. Those groups are then further divided according to **fields where the products are needed**. To give an example: stainless steel is needed in building and construction but also in gastro, medical or chemical businesses). The graphic below depicts an extract of this segmentation tool and the segmentation criteria. The example of metalworking has been chosen. The advantage of this tool is that it illustrates a very good first try to actually segment the broad market of the ASD division and it is to be considered positively that one has taken into consideration customer needs. However, segmentation criteria used are not defined precisely enough up to this point and no usage of descriptive variables takes place. Nevertheless, there is a great chance to relatively easily **link this data with the overall company segmentation based on industry coding**. From the viewpoint of ASD, it is therefore highly realistic to actually establish a two-layer segmentation approach by identifying this first layer segmentation for each division and then combining it with the overall segmentation criteria. This would mean that companies would have to be sorted according to their industry codes and then be transferred into

the first level where filtration can take place. IT support will be needed to sustain the smooth working of this process.

**Figure 10: Extract ASD First Layer Segmentation**



*Source: 3M company data, ASD Segmentation*

To put it in a nutshell, in the ASD division, one is very positive that descriptive and need-based segmentation criteria can indeed be combined. Updates would have to be undertaken often and furthermore, a tool for assessing and tracking of competitors as well as channels is also wished for. Moreover, it would be great to gather more information about customers’ customers as well. It was likewise encouraged to maybe combine the segmentation approach with the current CRM system. Still, for some of the most important segments, such as AOEM, detailed consumer insights (and even decision-making units) are available and captured in form of a penetration matrix already, so a very good start is given that can be built upon. Deep dives into other fields are also planned and therefore it can be expected to take some time but slowly each important group of customers could be understood better and marketing strategies could be tailored more precisely. In order to facilitate a smooth process, it is highly recommended to define segmentation criteria more accurately and standardize the databases for collecting information at least throughout the ASD division if not on a department-wide level.

**8.3.2. Automotive Aftermarket Division**

In the Automotive Aftermarket Division, the situation concerning segmentation is quite different. Here, the **core customers are paintshops** which all have similar processes and therefore also similar needs. Descriptive variables about them are gathered already in a **detailed penetration matrix** (an Excel sheet) and referred to whenever they need to be segmented into different groups. The **segmentation criteria** captured in this matrix are market shares, product information, number of repairs, commodities, material used for repairs and contact details of the customers (it should be noted that only some of the above-mentioned information can actually be used for market segmentation and even though all information might be useful, it should be considered

whether it could make sense to store the actual segmentation criteria in a separate database).

An advantage is that from this matrix, potential can also be identified when comparing the actual sales figures with the number of repairs the paintshops have. **Classification into A, B and C segments** can thus be performed as well. This is a unique characteristic of the Automotive Aftermarket Division, it is hardly possible to predict future potential as accurately in any other division.

Nevertheless, the **general industry**, which can partly also be served with AAD's products, is the **main source of potential** for AAD and more information need to be obtained with the help of the other departments that are serving this segment better already. A common feature is that this division also relies on its sales representatives for information gathering and considers them a valuable source.

With regards to a multi-layer approach, AAD seems to be dependent a lot on the assistance of the other divisions, especially for the general industry segmentation, and does not consider segmentation absolutely necessary for its core segment, paintshops. Also concerning competitors, no danger is felt by this division and it is believed that enough information is available about them. It has been admitted, however, that more descriptive data should sometimes be used in order to identify trends in the industry and to crosscheck current customer classifications.

To sum up, it is to be said that a multilevel approach could be useful for the Automotive Aftermarket Division, too, especially with regards to exploiting potential in the general industry market. Currently, information about paintshops seems to be available to a sufficient extent (even though no segmentation criteria are applied to further narrow down the paintshop market but that is acceptable due to the similarity of their needs). It was also stated by the interviewee that for AAD's core segment paintshops, a more structured segmentation approach would most likely only bring negligible added value. However, moving away from the idea to mainly consider paintshops seems to be essential since the trend is that the potential of this segment is decreasing. Furthermore, the large product portfolio of this division offers great opportunities for the general industry as well. Training on AAD's products would be needed for the other divisions and it is hoped for their cooperation.

### 8.3.3. Automotive Division

Similar to the results obtained from interviewing managers of the AAD, representatives of the Automotive Division also claimed that segmentation is more difficult in their case than in other divisions, but due to different reasons. All products in AD have a **single purpose and serve a single market**, which immediately makes segmentation easier. The **distribution channels** are crucial to understand in this division because they differ in many ways from the ones used in other departments. Often, the decision-

making units of the customers are outside of the Czech Republic and 3M colleagues in the applicable countries then take care of the customer, but 3M Česko cannot influence the buying process in such cases. **Segmentation therefore becomes impossible** for these customers. For the remaining ones, research has been conducted three years ago through an online questionnaire and personal visiting of potential new accounts, however, no relevant new customers could be identified. It can be assumed, consequently, that the market is indeed penetrated to its fullest extent already, even though an update of this information should be performed to verify it once again.

To sum up, it can thus be said that it was claimed that customers are known fairly well in the Automotive Division. Their needs also seem to be straightforward because each product in this division only has a single purpose that it serves. All this being said, it is still to be tested if a segmentation scheme could not also make sense for AD, this division should, however, not be the main focus of its implementation.

#### **8.3.4. Industrial Adhesives and Tapes Division**

From the interview with the IATD representative it soon became clear that **segmentation in this division is the most difficult and complex** but yet needed procedure. The enormous amount of products and its wide range of application make it challenging to group clients. Furthermore, also in this division, little knowledge about customers is available and with only four sales representatives in the field, it is hard to obtain more information in a decent amount of time. The portfolio consists of 20 commodities of which some only have one purpose and serve one market and they are thus relatively easy to segment. Others, on the other hand, also have one purpose but serve several markets and most commonly, one finds multipurpose products serving multiple markets. As mentioned before, here market segmentation is most difficult.

Another critical issue in this division is price. 3M only offers premium products, but not all customers actually need such high quality products and prefer a cheaper competitive product that attends their need equally good. In order to attend the industrial market really well, it is indispensable to know customers' needs and thus be able to identify those for whom the high quality products are surely useful.

IATD already has determined the **most relevant industries** for the division and those are Transportation, Automotive, Label Converters and Electronics. However, this **classification is still very broad** and smaller subsegments need to be determined. It should be known that this categorization is not really based on any subtle segmentation criteria, instead mainly gut feeling was used to determine these segments, which is of course a major shortcoming of this approach. Also, one is aware that these priorities are not lasting and a more reliable approach for segmentation is wished for that can easily be re-applied and therefore functions in the long term. Again, market data would be needed to do so because except for the transportation industry, little knowledge is available about all other markets (electronics might be another exception, here detailed

assessment of the two major key accounts already took place. It is to be questioned, though, if there really is not more potential to be found in the rest of the market that nobody is aware of at the moment).

Summing up, it should be clear that the Industrial Adhesives and Tapes Division is the one where segmentation is the most difficult but most probably also the most important. Clear segmentation criteria should be defined and more customer insights gathered and stored in suitable and easy-to-handle databases. Even though segmentation is expected to bring more valuable insights and help dividing the market and focusing on specific customers in more detail, it should be kept in mind that benefits always have to outweigh the costs. In the specific case of the IATD, costs might turn out to be excessive in the long run in order to justify segmentation, it goes beyond the scope of this study to verify this claim though.

### **8.3.5. Aerospace Division and Renewable Energy Division**

Even though no interview could be conducted with last two divisions, a few words should be addressed to each of them. The **Aerospace Division** is first of all rather small and therefore less significant for the Industry and Transportation department of 3M and secondly, it was mentioned that it behaves very similar to the Automotive Division, meaning that many customers cannot be influenced.

Unfortunately, the responsible manager for the **Renewable Energies Division** was not available for an interview but the information was received that segmentation there is straightforward, some work needs to be done to perform it correctly but one already has a concept developed to do so.

### **8.3.6. Customer Relationship Management**

Another interview was conducted with 3M's Customer Relationship Management (CRM) specialist. As the term implies, CRM is an instrument for managing a company's interaction with its customers. Nurturing the relationship with clients is only one of the aims of CRM and thus this strategy is highly important for any company. Often, and also in case of 3M, the success of a CRM scheme is dependent on sales representatives' willingness to use the system and to enter data on a regular basis.

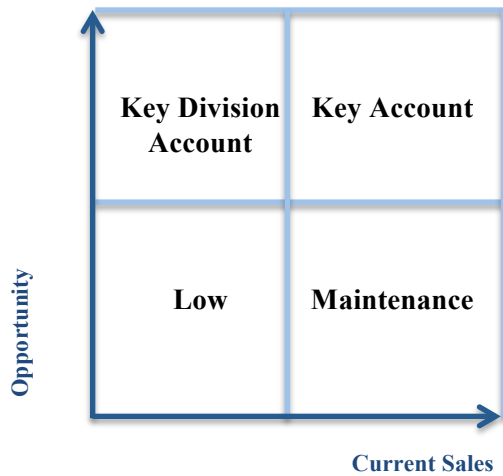
It was decided to conduct this additional interview, even though originally it was not thought that CRM could be related to the segmentation system. However, during the conversations with the divisions, the idea to involve CRM as well came up several times. The goal of this conversation was to find out more about the current CRM systems and tools in place and to consider whether linking the segmentation approach to CRM or vice versa could be possible and meaningful. In the beginning of the interview, it was immediately stressed that the interviewee just joined 3M several months ago and therefore no strict rules for CRM usage have been set yet. However, user requirements

of all different departments of 3M have been gathered already and priorities have been assigned. A challenge was seen in getting the sales people to use the CRM system more frequently and more correctly (currently it suffers from duplication of customers and incorrect entries). Further, it was criticized that the information entered mainly depends on employees' feelings and there is no analytical approach yet. A CRM group consisting of 12 employees and a core team of six of them has been established so far and they are aware of these limitations and steps have been undertaken to overcome them. A mobile CRM system is planned, for example, and one is also eager to implement segmentation into the CRM database, which is based on the Oracle operating system. Oracle claims to be the world's most complete customer relationship management, offering a broad portfolio of CRM solutions "[...] that address all customer touch-points and provide rich functionality to support the specific business needs for organizations of every size to deliver a superior customer experience." (Oracle website) Hence, the system allows for a lot of data input and information can be filtered in all kinds of ways through the reporting function. Each customer is stored as a new account and any information about him can be entered manually. Currently, the sales representatives perform information recording, but in order to ensure a more accurate usage without duplication, it is considered to centralize the data input.

The main challenges mentioned during the interview were that sales representatives should use the Oracle platform more often and more consciously. To facilitate this for them, rules will be established that they can follow and it should be checked if everybody is indeed familiarized with the system and knows how to use it. Updates do then have to be performed more often and by the sales people themselves. A potential problem could be the fact that each company can only be assigned to one industry code in the Oracle system and it is to be tested if this is in compliance with the divisions' needs. Generally, it is to be seen negatively that the coding used in Oracle is based on NACE codes instead of ISIC (compare to the chapter Industry Code Conversion Table on page 51). Further, if segmentation was to be included into the CRM database, the fact that currently no products or sales figures are listed in there and it is thus not possible from this database to obtain an overview over what products are presently used by the customers, could become difficult.

Besides the rules that the CRM manager wants to introduce for everybody using Oracle, he also recommended **classifying each account according to its potential** meaning into either key account (great opportunity and high sales figures already), maintenance (lower opportunity but great sales level currently), low (low opportunities and low current sales) and key division account (great opportunity but currently still low in sales figures). The figure below depicts this idea graphically; please refer to it for a better understanding. It is to be said that this is a good idea that could be relatively easily included into the segmentation approach as well.

**Figure 11: Account Classification**



*Source: own design*

The first stage for inserting segmentation criteria into the Oracle database could be at the so-called “lead” stage. If a department wants to start a campaign, the framework for this (e.g. budget, cost/benefits, recipients etc.) can be entered into the Oracle database. Leads can then be defined in the next step followed by opportunities (on each of these two levels, a lot of information about the customers can be entered again that can later be filtered as needed). To sum up, in the long run it definitely seems as if CRM could and should become a part of the segmentation process at 3M, but it is to be seen whether in the short run it would not add too much complexity to the already very complicated task.



## PART IV: EVALUATION & RESULTS

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The last part of this thesis will now link the findings from the theoretical investigations with the research outcome and provide suggestions for improvement of 3M's market segmentation tactic. After the research outcome has been recapitulated and a link to theory established, a proposal for a new segmentation approach for 3M Česko will be indicated and recommendations and guidelines for the short, medium and long run will be given. Limitations of the research methodology and market segmentation studies in general will be examined before a conclusion will be drawn.

### 9. Linking Research and Theory Findings

*"In theory there is no difference between theory and practice. In practice there is."*  
(Yogi Berra)

After having investigated theoretical concepts concerning market segmentation in the first part of this thesis and having gained a decent understanding of current segmentation processes at 3M, its advantages and shortcomings in the second part, it is now time to link these findings together and use this as a basis for the development of future strategies in the next section of this work. First and foremost, it is to be pointed out that both, theory and practice, underline the **importance of market segmentation** and it is widely considered one of the most useful marketing and strategy tools. Tailoring products and services to customers' needs as well as identifying gaps in the market that are not yet utilized, is facilitated tremendously by proper market segmentation. 3M's department under consideration for this study has realized this, which is why this report is being written and why great emphasis is placed internally on developing a more beneficial segmentation scheme. However, market segmentation – especially for industrial markets as it is the case with 3M – is challenging and to do it in an effective way, accurate planning and detailed guidelines are needed. Costs and benefits should be weighted against each other to finally decide if market segmentation makes sense in the given case. The next section will point out which steps could be undertaken at 3M and the purposefulness of market segmentation for each division will be evaluated as much as possible within the scope of this paper.

As is pointed out by various authors in theory, the collection of primary data is usually indispensable when market segmentation is to be conducted. 3M has realized this and even though some efforts are put into understanding customers better already, all representatives of the divisions have criticized during the interviews that more **market research** needs to be conducted to allow for an adequate performance of market segmentation. Firstly, however, it is always advocated to refer to available secondary data and surprisingly, this research attempt is rather neglected at 3M Česko at the moment. It is definitely recommendable to focus more on both types of information

gathering, but unlike primary data collection, which is very expensive and time-consuming, secondary research can relatively easily be executed and can bring interesting results as well. Moreover, it was shown that it is crucial to collect all data in an organized, frequently updated database. Questionnaires, company visits and interviews are further recommended to find out needs, which also should be noted down in the customer catalogue. Presently, each division in the Industry and Transportation department handles its own databases and all of them are organized differently and contain unlike information, which makes the completeness and accuracy of these records hard to judge. Comparison between divisions is almost impossible due to the differing features that these databases hold. Additionally, theory points out to pay special attention to decision-making units and keep track of the responsible individuals in each company, because they are the ones that not seldom decide over important procurements of great value. Keeping a good relationship with them is of utmost importance for the company and understanding their behavior and requirements is a central factor for segmentation as well. So far, only the Abrasive Systems Division consciously pays attention to whom the responsible people for the buying process are in the organizations and keeps their names updated in their database. As can be seen from this comparison between simple, recommended procedures in textbooks and the reality at 3M, space for improvement with regards to obtaining information about customers and keeping this material well organized, accessible and updated, is visible. Clearly, one should keep in mind that not everything that is recommended by theory has to be implemented and necessarily makes sense in each case; concerning the documentation of the little information that is available at 3M about the market, however, improvements could be executed relatively easily. The next chapter will go more into detail recommending precise measures that can be undertaken.

Agreement between theory and practice can again be found when considering the difficult task of selecting **segmentation bases**. Theory suggests that the criteria for useful segmentation bases are that the segments are relevant, measurable, accessible, feasible and timely. Up-to-now, the divisions of the Industry and Transportation department are struggling with the right selection of segmentation criteria, which is not surprising, taking into account the vast product portfolio and application in an enormous amount of industries. Therefore, a first good start would be to always keep these points in mind when thinking about suitable attributes at 3M in the future. Another important finding that can be obtained from the theoretical research, and that is maybe the most crucial shortcoming for 3M at the moment, is that always various segmentation variables should be used. The standard bases recommended for industrial markets are segmentation according to the industry, geography, size of the company, operational characteristic, purchase strategy and behavioral criteria. A distinction is further made between physical attributes, which include geographics, firmographics and socioeconomics and behavioral attributes, where criteria such as psychographics, product usage, benefits and other behavioral dimensions are incorporated. This analysis is mainly conducted because the Industry and Transportation department has realized that changes need to be made, especially with regards to segmentation bases, meaning that the foundation is laid. What is important to consider for the future segmentation

conduction is that it will indeed need to include many different segmentation variables. Cluster analysis or other statistical methods could theoretically be used in a next step for the precise determination of market segments, but in case of 3M, this will become too complex and is thus not recommended.

It can also be said that parts of the **hypothesis** are approved by theoretical findings. The hypothesis of this paper was that linking together need-based and descriptive customer behavior characteristics would lead to more effective market segmentation within the 3M Industry and Transportation department and it was said that first of all it is to be tested if such a link can be created at all. Undoubtedly, experts in the field of segmentation suggest the combination of descriptive as well as behavioral criteria (compare the chapter on Segmentation Bases on page 30). Still, even though theory complies with the hypothesis to the extent mentioned above, the difficulty is the execution. Frequently, it is recommended in literature to combine multiple segmentation criteria, however, almost never, or very rarely, is it discussed how this should be done. The microsegmentation approach by Wind and Cardozo (compare Wind and Cardozo's Two Stage Segmentation Approach on page 35) is the one that yet mentions the most details, however, it is pointed out multiple times that in practice this approach might be too expensive or time-consuming to implement. Generally, multiple layer segmentation approaches make sense because they are formed around the main idea of implementing a process consisting of multiple steps where in each layer information is filtered according to segmentation criteria. The overall goal is to identify homogenous market segments. Perry points out that multidimensional segmentation approaches are only likely to bring along a suitable solution if they are applied to all segmentation criteria and are used a-priori, meaning that the features are defined prior to the analysis. For post-hoc segmentation based on cluster analysis, such multidimensional tactics are not appropriate because it would result in problems concerning the grouping of the clusters. It would not be possible to clearly distinguish the clusters from one another and thus it would have a negative influence on the resulting market segmentation. (Perrey, 1998) What this means for 3M is that more focus should be put on combining multiple segmentation criteria (need-based as well as descriptive). Some divisions, such as ASD, have done a good start by including e.g. the decision-making units into their databases, for example but with regards to needs, very little documentation takes place. Doing so would be highly beneficial, because when a more high-level segmentation approach will be implemented, it would be relatively easy to refer back to this information and include it into the segmentation procedure. A first step to achieve this definitely is to gather more market data and consumer insights. It should be tried to get a better picture of each individual customer. How does he use 3M products? What needs serve these products and which one remain unsolved and therefore hold potential for the company? Are there other companies with the same usage patterns that could be grouped together? These questions should be answered with the help of carefully chosen criteria that will be gathered and then compared among industries. As a result, segments will appear and company communications can be tailored to the needs and behavior of these customer groups.

As discussed when talking about the various approaches that authors introduce in their writings, often they do not contain exact information on how to treat certain topics. Also, it should be noted that unfortunately no **approach or framework** could be found that would be completely applicable to 3M's situation. Altered aspects can, however, be taken out of the different suggestions and a new approach can thus be formed. The following lines will shortly refer to the most useful aspects that should be taken out of the theoretical findings and be used by 3M in the future. The concrete recommendation will be presented in the next part of the thesis, here, it is to be said that before segmentation is started, it is important to involve all relevant parties into the process and to define objectives that everybody (meaning the sales and marketing managers of the I&TB) can agree upon. Simkin's idea to conduct a workshop for this first phase seems to be the most suitable (compare B2B Sectorization Framework by Simkin on page 43) and is in agreement with Doyle and Saunders and Laiderman's point of view that setting clear goals is indeed the first step. As stressed before, preparing and updating customer databases is what is to follow next (according to Laiderman). Simkin recommends describing customer groups and then analyzing their characteristics and buying behaviors as good as possible with the information gathered until this point. Whatever way is decided to describe the segments, a first step could be the usage of codes. Often reference is made to **industrial coding** just like it is now tried to be used by the Industry and Transportation department. Even though originally not tailored specifically to the industrial market, Frank, Massy and Wind's concept of classifying segmentation bases into observable and unobservable, as well as general and product-specific categories, is worth considering here (compare Frank, Massy and Wind's Segmentation Criteria Approach on page 32). Working and sorting observable general criteria such as geographic and demographic variables of companies becomes possible through the grouping of customers into industry codes. Furthermore, one of the most liked and most easy to implement approaches is that proposed by Shapiro and Bonoma's (compare Shapiro and Bonoma's Segmentation Criteria Approach on page 34), whose idea it is to work from the outside in through using a nested approach. By doing this, different criteria are touched upon and the risk to oversee some important features is minimized. Also the differentiation between macro- and microsegments clearly is supportive for meaningful segmentation. This is the best way to link secondary and primary data and behavioral as well as non-behavioral variables can be considered. The process should be started by looking at demographic criteria (which could be done through segmenting according to codes as mentioned above), operating variables are taken into consideration next. In order to do this, a prerequisite is of course that those criteria have been entered into the database before, so that at this stage, sorting can take place. As the authors point out, the next step is the consideration of purchasing approaches, which is very often neglected. In order to perform this level correctly, information about the decision-making units need to be gathered and available. For the next two layers, situational and personal factors, detailed knowledge about the customers is indispensable. This data are the most difficult to gather, but give crucial hints about the clients. Here, 3M could rely on their feeling about customers, which will be strengthened after visiting customers more regularly to obtain more information about the first layers (primary market research).

It should be clear by now that no matter what theory one chooses, in the end, the very key to segmentation is market data. Without sufficient information about the customers, as much change and effort as wanted can be performed internally, but the result will never be satisfying. When a good understanding of customers' needs, their behaviors and preferences is combined with descriptive features such as location, industry, company size etc., grouping of clients into segments can take place and prioritization within the segments can be performed to determine which marketing strategy to apply to which segment.

## 10. Recommendations / Next Steps

*“The best way to predict the future is to create it.” (Peter Drucker)*

After having seen that the current procedures of 3M’s Industry and Transportation department are in many ways in compliance with theoretical findings of experts in the field of industrial market segmentation, the moment has come to look ahead and describe recommendations for the future. It should be noted that many proposals cannot be portrayed in detail but should rather serve as food for thought for future endeavors. The previous analysis has clearly confirmed 3M’s original assumption: a **multi-level segmentation approach** is the right method to proceed with. Dividing segmentation into different levels has two meanings in the case of the Industry and Transportation department: firstly, in order to ensure a clear connection between **descriptive** and **need-based segmentation criteria**, it is recommended to perform this in two steps and link the findings together. Secondly, it has been found that the first step – segmentation according to descriptive criteria (such as company size, location, number of employees, usage frequency, etc.) – can be performed on a **department-wide level**, whereas the second phase – need-based segmentation (e.g. preferences, values, usage patterns, elasticity, etc.) – has to be accomplished by **each division** itself (at least in the short run). More information about the organization of each level will be provided below. It has been found applicable to divide the future steps into short, medium and long run strategies due to the reason that at the moment the segmentation system at 3M has just been started and therefore, no drastic changes can be implemented on various levels simultaneously. The department should try to move forward steadily, but taking one step at a time. Following, these timely distinctions will be taken into consideration, placing most emphasis on the suggestions for the short run.

The subsequent analysis will briefly indicate recommendations for the next undertakings of market segmentation at 3M. As mentioned before, those will be divided into short, medium and long run suggestions. In the short run, elaboration will be given to descriptive segmentation procedures as well as need-based approaches and recommendations will be found on how those two could be linked. Next, limitations of this research will be referred to before an overall evaluation will be given.

### 10.1. Short Run Recommendations

In the short run, steps have to be undertaken that prepare the multi-level segmentation process and deliver **training and information** for everybody who is going to be involved. More concrete, this means that a clear understanding has to be created about how the segmentation should look like and how responsibilities will be distributed. As has been recommended by theory, **mission and vision statements** should be worked out that precisely capture the purpose of market segmentation so that the goal can unmistakably be seen by everybody at all times. The basis for market segmentation and therefore for all strategic planning is to obtain a full understanding of the market in

order to be able to predict customers' behavior and trends accurately. In case of 3M, one should probably refrain from the idea of a 'full' understanding – due to the number of industries, companies and customers that use 3M products and their wide application, this is almost impossible. But better **customer insights** than presently obtained could be gathered, even though it would require certain investments. Further, it is absolutely essential to keep this data in a very structured document. Here it is recommended to establish one **standardized database** for all divisions. Currently, they all have their own Excel sheets where data that they consider important is entered. Even though those records do not differ entirely, it is still recommended to transform them to one standard level, because this would critically facilitate the aimed one-level segmentation method for all divisions later on. Furthermore, the **criteria** for good segmentation (compare the section on Segmentation Bases on page 30) should be kept in mind and identified segments should be compared against them. That way, it is ensured that all segments are significantly different from one another and considerably large.

The next section of this paper will focus on the short run implementation in more detail, because the most acute changes can be done soon. Before, however, the medium and long run strategies will briefly be touched upon.

## **10.2. Medium Run Recommendations**

As will become clear in the following part, the short run strategies aim at developing a **two-level segmentation system where the second level, the need-based segmentation, will be performed by each division independently**. Once all divisions have gained a certain routine with this procedure and more requirements or demands have become visible, it should be tried to find a way to implement one system for this second level segmentation that will work for all divisions. Because the product portfolio is so wide and target groups of the divisions are not homogenous, this is a very challenging task. It is perceived too early to start this phase immediately, especially because at the moment many divisions (like ITAD, for example) do not have any organized segmentation system in place, so this needs to be started first of all. For others, like ASD, this step could probably be implemented earlier, because their process with the first level segmentation already is very good. Still, it is important to bring all divisions to a common level before proceeding with standardization. From the contemporary point of view, it looks as if the segmentation approach that the Abrasives Systems Division performs – namely the prioritization of several groups that are then split into needs and application areas of 3M products and then further subdivided into industries/fields where the products are needed – could be the guideline for the first-layer segmentation of each division. All division should thus go ahead and perform this prioritization phase for their customers (as will be described below in the section 10.5 Guidelines for Need-Based Segmentation) since it indeed seems to be compatible with all departments.

It should be noted, however, that this assumption might change once all divisions have more experience with segmentation approaches. Other needs and requirements might arise that might change the suggested framework. Theoretically, it could also be possible to skip the medium run recommendations completely and immediately jump to the proposals for the long run. These decisions have to be taken at a later point in time, depending on the progress that is made.

### 10.3. Long Run Recommendations

In the long run, it is highly recommended to also include **Customer Relationship Management** into the segmentation process. As mentioned before, first of all, a functioning two-level segmentation approach has to be implemented, that is why it is too early to include CRM immediately. For the future, however, a lot of potential can be seen in this regard and it is to be checked if the **Oracle database** would not provide the perfect platform for combining CRM and market segmentation. Oracle offers many features that are currently not utilized. The problem is that at the moment CRM is suffering from duplication of data and rare or even wrong usage of the sales people. The requirement for considering Oracle as a future tool for market segmentation would of course be to eradicate these shortcomings and ensure optimal functioning of the database as well as familiarize every employee with the system. Overall, it is perceived worthwhile doing so because the usage of Oracle could contribute tremendously to the company-wide standardization of market segmentation procedures. While the divisions work on their own segmentation approaches in the short run, the CRM division should use this time to clear up the database, train everybody that is supposed to work with it in the future to ensure prevention of simple handling problems and advertise its advantages, so that it will soon enjoy a better reputation and acceptance. An issue that would definitely have to be solved before CRM could be included is that both, segmentation and CRM systems use the same industry codes as a basis. As mentioned before, CRM is still working with the rather outdated, national NACE coding, whereas the conversation tables for market segmentation have been introduced to allow a comparison between NACE and ISIC (compare the paragraph on the Industry Code Conversion Table on page 51). For simplification, it is recommended to change all systems to the ISIC coding. Another aspect to think about is whether it would make sense to include products into CRM, thereby allowing for immediate capturing of which customer is using which products. This would be of help for segmentation decisions, because first conclusions about preferences and needs could be derived that way.

Furthermore, it is recommended to also consider **customers' customers** in the long run, meaning an even heavier investment into market research would have to be made in order to obtain information about the behavior and needs of this group that clearly influences the main customers as well. The best way to conduct this research would be through questionnaires with a big sample of customers of all different divisions in order to ensure a satisfying response rate that allows for drawing conclusions.



The overall goal for long run segmentation methods is to truly **implement segmentation into the everyday business activities** of the employees of the I&TB department. It should become a standardized process to crosscheck internal and external data, update databases and carefully plan marketing and communication activities by referring to these data and the thereby obtained segments.

#### **10.4. Guidelines for Descriptive Segmentation**

Descriptive segmentation is rather straightforward to implement and can therefore be commenced in the short run. A first attempt to perform descriptive segmentation has already been made by creating the Industry Code Conversion Table (compare page 51). Research has clearly indicated that taking external market data into account when segmenting customers is an important thing to do. Market research data that can be obtained from reliable sources such as Global Insight is a helpful indicator for trends in customers' behavior and market developments. The beauty of ISIC or SIC (Standard Industrial Classification) codes is their widespread acceptance, meaning that many marketing references use the coding as a basic data gathering unit. "SIC [and ISIC] codes provide companies with an insight into the markets that they sell their products and services to, allowing them to identify key market segments based on industry clusters and combine this with other profiling information (purchase patterns etc.) to establish the profile(s) of the ideal target customer for their business." (Experts 123, 2012) This means that codes are assigned to customer records, and market segments can be identified on the basis of industry clusters. This enables companies to target groups more effectively and position their products and/or services better. When talking in terms of Wind and Cordozo's macro- and microsegment approach, segmenting according to industrial codes normally is done for the macrolevel, so in order to obtain a rough overview over a still relatively large segment. The code-based segmentation analysis allows for classifying business customers into categories based on company size and industry. In a next step, the underlying market data allows for calculations such as market potential value and ranking against other customers. This shows that descriptive market segmentation does not purely rely on external data only, but internal sources should be taken into account as well. Information such as sales figures or the type of products recently purchased can thus be retrieved from the internal databases.

What matters, according to Harrison and Hague, is that the defined segments are truly different from one another, that they are big enough (and thus do not require too many resources and energy) and that all companies clearly fall into one of the segments. It has been agreed upon that in industrial market analysis, unlike in consumer markets, companies cannot fall into more than one segment. (Hague, Harrison, 2010) This finding could consolidate a problem for 3M's I&TB department because the interviews have shown that managers believe that it is not possible to assign all companies to one industry only, it was claimed that often they are active in several business areas. This should be checked and subsequently a list that indicates which industry each customer belongs to should be created (assigning a code to each company).

To sum up, in order to get this first level, descriptive segmentation on the go, first of all, it has to be double-checked again if all divisions indeed agree with the 15 industries that have been assigned priorities for the I&TB department (compare chapter 7.2 Industry Code Conversion Table on page 51 for more information and a list of the prioritized industries). Next, all companies should be allocated to one industry and an overview over all clients with their corresponding ISIC codes should be created. Clear responsibilities should furthermore be assigned among all employees, clarifying who is responsible for checking market data for which industries how often and in which sources (external as well as existing internal ones). An easy system to keep track of those findings then needs to be installed.

Furthermore, it is recommended to expand the systems that the CRM system tries to use, namely to classify each customer not only into an A, B or C customer according to the profits currently generated by the account, but also according to its potential. As has been described in the section about Customer Relationship Management at 3M on page 62, customers are assigned a spot in a matrix that rates them according to their opportunities and current sales level. As a result, they are either classified as being a key account (if sales figures are high already and there is still opportunity for improvement), maintenance (if sales level is already high but additional future potential is rather low), of low importance (if both opportunities and current sales level are low) or a key division account (meaning that currently they are still rather low in sales but opportunities are estimated to be promising). Such a classification should take place for every customer that is in the database and the responsible sales personnel should be asked to do so. Please refer to Figure 11: Account Classification on page 64 for a better understanding of what this matrix should look like.

### **10.5. Guidelines for Need-Based Segmentation**

Also need-based segmentation should be focused on immediately and methods should therefore be established in the short run as well. While company size or industry code classifications are easy to gather for demographics-based segmentation, behavioral data, needed for this level of segmentation, is not that easy to come by. This is a problem for I&TB because, as mentioned various times until now, it is absolutely necessary to include need-based segmentation criteria as well. Yankelovich (1964) suggests that marketing directors should never assume in advance that any one method of segmentation is best but at first, all probable segmentation methods should be mustered and then the most meaningful chosen. This is easier said than done. However, there is indeed not one method that could be found in theory and that is applicable to work with at 3M now. Therefore, it is suggested that each division of the I&TB department performs its own need-based segmentation in the short run. More and more standardization of data collection as well as processes used should take place over time, though. The need-based segmentation divides the previously defined macrosegments into smaller microsegments. As mentioned by Wind and Cardozo, a company's sales

force should play a central role in determining microsegments because they know the companies best.

Each division should identify priority groups and subdivide those according to their needs and the application area of 3M products, just as the Abrasives Systems Division has already done it in their first layer segmentation. Clearly, information of companies' needs has to be obtained through market research, e.g. company visits, questionnaires etc. Again, the main point of reference should be the existing sales people 3M already employs and it should certainly be considered to extend this network. It is without a question that tracking the behavior of secondary customers is important. Deep dives, as already planned in some divisions, are of course another great way to gather more information in a relative short amount of time. If resources allow, more of these should therefore be conducted across the whole I&TB department.

It is crucial that all this information is kept in a well-organized database or penetration matrix (as already existent in some divisions). Furthermore, it is endorsed that the outline of this database will be adjusted for all divisions in order to achieve a more standardized procedure. It is also recommended to include the decision-making units somewhere in the segmentation process because as stated earlier, they often influence the final decision tremendously and it should hence be clear at any time who the responsible people are and what characterizes their decision-making process. Again, the ASD can be taken as a good example here because this division notes all DMU details in their penetration matrix, meaning that they are always available. This way, it is much easier to understand the buying process, which can shape a company's consumption habits tremendously and it is 3M's chance to respond to the differences in buying patterns by individualized communication and marketing approaches.

## **10.6. Guidelines for Linking Descriptive and Need-Based Segmentation**

Linking descriptive and need-based segmentation is certainly the hardest part and no theory or proven approach could be found that would suggest a framework of how to do it best. It is a fact, though, that ideal segmentation comes from linking both segmentation levels performed previously and it is obvious that this way, the low cost demographic approach (macrolevel or outer nest of Bonoma and Shapiro's approach, compare page 34) would be combined with the knowledge of very specific consumer needs (microlevel or inner nests).

The most realistic way to do this would be to sort companies according to their industry codes and then transfer this information to the first level (need-based segmentation) where filtration takes place. What is important to keep in mind is Wind and Cardozo's approach, which taught us to always perform macrosegmentation before considering the microlevel. For 3M, this means that first customers need to be assigned with a code in order to allow for grouping according to company size, industry and usage rate. Internal data as well as external sources such as Global Insights can be used for this step (see

description above). Relevant companies for the purpose at hand can then be conveyed to the first layer segmentation of each division where more information about customers' needs, their buying behavior, decision-making units etc. can be retrieved from the previously created databases.

IT support will certainly be needed throughout the whole process and it is yet to be determined whether Excel will serve as a reliable basis or whether the data input will exceeds its capability and a more sophisticated IT tool should be taken into consideration. Furthermore, clear rules for updates should be established so that everybody knows who will be responsible for updating information and how often this should be done. Also it is important that the divisions work closely together to ensure that no customers are overseen and gaps can really be determined.

## 11. Limitations

*“A wealth of information creates poverty in attention.” (Herbert Simon)*

Especially due to the time restrictions of this work, there are certain limitations, which the elaboration is exposed to. Firstly, the findings of this thesis are based on observations and information that was obtained from the semistructured interviews with 3M sales and marketing employees completely, no previous experience in the field of industrial market segmentation existed. It has to be noted that **systematic errors** or systematic bias could have occurred. “Systematic error results from mistakes or problems in the research design or from flaws in the execution of the sample design.” (McDaniel, Gates, 2008) Possible systematic errors for the present study can be ascribed to answer distortions while questioning. This means that some statements in this thesis might well be biased because they are reliant on the author’s understanding of what employees were saying. Furthermore, it is possible, for example, that interviewees could have interpreted questions in the wrong way and it could have been the case that certain questions were answered wrong or maybe no answer was given at all. This last point is very likely because it was consciously decided to conduct semistructured interviews (compare chapter 8.1 Data Collection – Semistructured Interviews). Semistructured interviews have many advantages (as mentioned previously when talking about the research methodology), however, shortcomings have to be realized as well. One disadvantage is that the answers cannot be compared as precisely as would have been the case with a standard questionnaire, for example. Some questions mentioned on the list of potential subjects were finally not discussed during the interviews. Moreover, it is to be recognized that neither for the interviewer nor for the interviewees was the **language** the interview was conducted in their native language. Even though no obvious problems could be encountered with using English during the interviews, misunderstandings cannot be eliminated completely. Therefore, this constitutes another restraint for the absolute exactness of the study.

When critically reviewing the analysis of the **application part**, it has to be realized that the author fully relied on the statements given by the 3M interviewees. Certain declarations could not be tested. To give an example: whether it is indeed true that the needs of paintshops are the same throughout the whole Czech Republic is questionable, but it was trusted on this assumption which was made by the responsible marketing manager who is to be considered an expert in this field. Consequently, biases cannot be banned entirely.

Furthermore, some divisions could not be interviewed. In case that **no full sample** survey is carried out, there is always a random error when the projection of the sample on the basic totality takes place. (Kamenz, 1997) For the present study, this should have not had a big influence, because another manager, who is not directly responsible, briefly provided information of the other divisions and he assured that there are not main differences to the other departments. However, for ensuring entire completeness of the work, it would have been necessary to interview all divisions.

With regards to the theoretical analysis, it has to be said that even though it was tried to indeed acquire a complete overview of accessible literature, the limitation is given that not all existing frameworks and approaches could be captured and that the **theoretical overview might be incomplete** in some parts. Further, it might have happened that misinterpretations of theories have taken place. This is likely especially because many authors do not give clear guidelines for the application of their proposed methods.

Moreover, it was stated in the beginning of this work that the **hypothesis** could actually only be proven right or wrong if it was possible to evaluate that the suggested segmentation method is profitable for the company. Since it went beyond the scope of this master thesis to perform a cost analysis, this limits the stated results to some extent.

A limitation of **industrial market segmentation in general** is that it is almost impossible to test or prove if it is done right. And even if one wants to assume for a moment that no mistakes have been made in the segmentation process, its effectiveness is always limited by management's ability to implement it into strategic measures. Furthermore, many authors claim that due to the constantly changing environment, segmentation becomes continuously more difficult. Also data collection and analysis is very challenging and in a broad market, such as the 3M's, reliance on sampling is unavoidable because costs would be too large and logistics very complicated to survey the whole market. 3M should keep this in mind when planning their future segmentation strategies. The bottom line is that even though the mentioned risk and impossibility to measure efforts correctly exist, the advantages of segmentation outweigh significantly and it should therefore be tried to engage in segmentation exertions by all means.

To sum up, it can be said that there are limitations, which have affected the result of the research. However, the purpose of the work was still totally fulfilled due to the fact that one was aware of the limitations at every time and stage of the study.

## Conclusion

*“If you are not customer oriented, you are disoriented.” (Philip Kotler)*

A marketing manager of a global energy company once said: “Segmentation is about knowing which customers are not worth targeting. Sure, you will sell to them if they come calling, but you will not invest in chasing them.” (Simkin, 2008) Even though the main aim of market segmentation is the opposite, namely to identify homogenous groups and tailor market strategies as precisely as possible to their needs and preferences, the manager is not wrong: proper market segmentation can save every corporation magnificent amounts of money, while opening up new opportunities for sales expansions at the same time. And another fundamental point has been captured in the quote: the key to success is customer insights.

The preceding study has stressed the importance of industrial market segmentation and one of the central learnings is that nowadays market segmentation is absolutely crucial for every company operating on the B2B market. Before working on the right concept and frameworks for the segmentation process, however, a vital requirement has to be fulfilled: customer insights have to be obtained. Without knowing the customers, their preferences and needs as well as typical behavior patterns and decision-making units, it is impossible to cluster them into consistent groups. Gathering market information might be one of the biggest challenges, but it is an essential foundation for market segmentation.

Market segmentation efforts at 3M’s Industry and Transportation department are in a very early phase. There are no guidelines providing a framework for how the topic should be treated and the need for a more sophisticated concept has arisen. Identifying segment parameters and establishing a unified segmentation system is perceived to be the right way out of the current rough clustering approach that is mainly based on employees’ gut feeling.

The hypothesis assumed that linking together need-based and descriptive customer behavior characteristics would lead to more efficient market segmentation within the 3M Industry and Transportation department. Intensive investigation of theoretical findings as well as interviews conducted with 3M sales and marketing managers lead to the conclusion that the hypothesis can be proven right. Effective market segmentation requires 3M to refer to both descriptive as well as need-based segmentation variables and the optimal outcome can only be achieved if these two are linked together. The present study has shown that linking these variables is the most difficult task and it is therefore recommended to conduct the segmentation analysis in several steps and over a longer period of time. All suggestions are hence divided into ones that can be implemented soon, others that can be taken care of in the medium run and some that will need more time and should therefore only be tackled in the long run. In the short run, it is recommended to further work on the department-wide demographic segmentation system based on industry codes and establish a need-based segmentation

approach in each division individually. Currently, all divisions have progressed differently and thus for some this first step will take longer and require more effort than for others that are already more advanced. In the long run then, it is suggested to include Customer Relationship Management data and processes into market segmentation. In order to do so, the CRM system first needs to be polished up and it must be ensured that it no longer suffers from data duplication and that everybody has received sufficient training on how to use the Oracle database.

The author of this text is aware that the present thesis could not contribute to such a great extent to the challenge 3M's Industry and Transportation department is facing in the Czech Republic with regards to the topic of segmentation as was originally hoped for. Since the market segmentation process at 3M is only at a very early stage, it was important to first of all understand efforts already made better in order to then analyze the situation and make recommendations for improvement. The findings show that 3M is already on a good track and has started to implement successful tools and to group customers according to their characteristics. However, it was considered not to be the right timing for recommending a sophisticated multi-layer segmentation approach that involves all divisions simultaneously, immediately. Nevertheless, in case the guidelines will be followed for the short and medium run, it is realistic to assume that within a foreseeable timeframe, also the long run, so to speak ideal case, will be implementable. Improvement of the current situation is almost guaranteed, taking into consideration how basic the present approach is.

Besides this, the recommendations given for the short, medium and long run are considered to be applicable to all departments. Still, one should keep in mind that several authors, such as Andreas Kaiser, remind the reader that segmentation is not necessarily the right approach in each situation. In general, it is highly recommendable for 3M's I&TB department to perform market segmentation; whether this will indeed be profitable though, is to be decided internally. Therefore, the individual divisions should be intensively included into the segmentation approach (as it has been the case so far already). For some, imaginably for example for the Industrial Adhesives and Tapes Division (which is the one with the most complex product portfolio), the effort might simply not outweigh the costs. This means that they might indeed decide to only refer to the first level segmentation, which uses descriptive features and do not formally conduct a division-wide need-based segmentation, because this would be too time and cost intensive. However, this does not mean that no consumer insight should be gathered. On the contrary, especially for those departments where it is most difficult to understand the consumers better due to their complexity and quantity, more market research should urgently be conducted in order to bring light into the dark.

What this analysis has distinctly shown is that the consideration of multiple segmentation bases is the right way to go for 3M. It can therefore be confirmed that their original assumption and attempt to include descriptive segmentation by using industry codes was correct. Also the need-based segmentation is already performed to a decent level in some divisions, such as the Abrasives Systems Division, others, like the



Industrial Adhesives and Tapes Division, still need to structure their information collection better. In a next step, it then becomes important to link these two levels together and indeed refer to both internal as well as external data when clustering the market. Attention should be paid to ensure that these data are gathered correctly, that they are accessible for everybody, that employees know how to use the databases (and systems such as Oracle which become relevant in the long run) and that one really refers to the segments whenever decisions about pricing, product, promotion and distribution are made. The goal is to establish industrial market segmentation into the everyday working processes of all 3M employees within the Industry and Transportation department in the Czech Republic.

Potential for further research is seen especially with regards to industrial market segmentation in general and the development of widely applicable frameworks that give details on implementation. Also, it went beyond the scope of this thesis to specify a system that allows for competitor tracking. Research should therefore be devoted to this topic within 3M in order to tackle it and reference to theoretical sources in this field is recommended.

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*"Opinion has a significance proportioned to the sources that sustain it."*

*(Benjamin Cardozo)*

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# Appendices

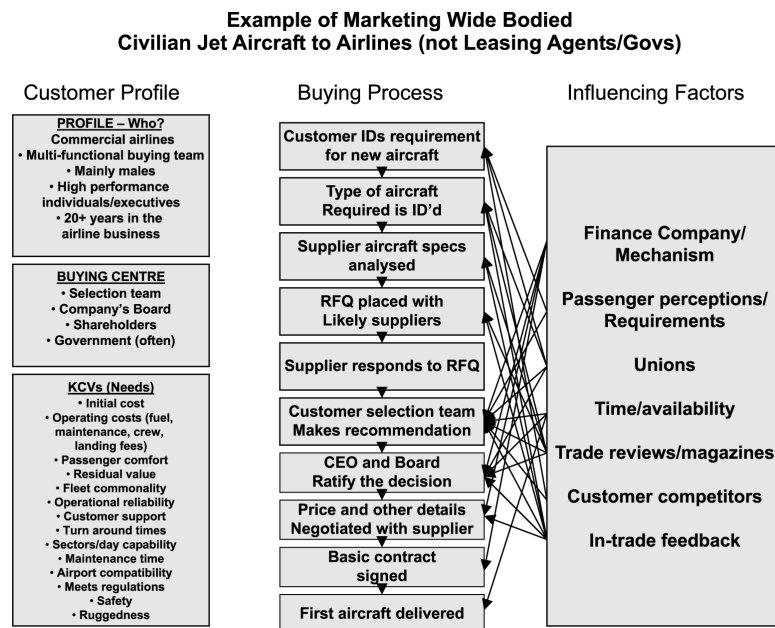


## Appendix I: Business vs. Consumer Demographics

Category	Business Demographics	Consumer Demographics
<b>Market Size</b>	Number of potential customers, number of stores/locations/plants for a firm, number of employees in a company	Population, number of households or families, family or household size
<b>Age and Stage</b>	Number of years firm has been in business, stage of product/industry life cycle firm is in	Age distribution, family life cycle
<b>Monetary Factors</b>	Financial factors (revenues, sales volume, profits), type of business in (products and services), management style/structure	Income, occupation, education
<b>Ownership Factors</b>	Own building/property vs. lease, type of establishment (storefront, office, plant, warehouse), length of time at facility	Homeowner vs. renter, type of dwelling, household mobility/stability
<b>Social Class (Industry Stature)</b>	Market/industry position, high tech vs. low tech	Lower/lower to upper/upper, cluster approach

Source: adapted from Weinstein, 1987, *Market Segmentation*, own design

## Appendix II: Example of a Buying Proforma



Source: Simkin (2008), *Achieving market segmentation from B2B sectorisation*

## Appendix III: Potential Interview Questions

- Introduction
- Timing
- Interest to learn more / understand better / improve if necessary
- Contact details

1. How important do you think **market segmentation** is for 3M? Why?
2. What is your typical **customer profile**?
3. What segments of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
4. What dimensions (methods) are used to segment markets? Why?
5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
8. How frequently are **updates** obtained? Do you think this is sufficient?
9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
10. How do you assess **competitors**?
11. How do you evaluate your present **marketing efforts**?



## Appendix IV: Interview Results

### 1) Interview with ASD Sales and Marketing Supervisor

1. How important do you think **market segmentation** is for 3M? Why?
  - Very important
  - At the moment too basic, more sophisticated approach necessary because right now not enough information is available
2. What is your typical **customer profile**?
  - 4 groups based on final market:
    - o AOEM (automotive) – 4 customers only, no more plants in the Czech Republic
    - o Transportation (bus, rail, tiers) – approximately 50 accounts in the Czech Republic
    - o General market – rest of sales, very difficult to gather data
    - o AAD (ASD partly has the same portfolio as the AAD department)
  - For AOEM a detailed penetration matrix is available that lists the customers' needs, different departments where the product is used, SKUs, the responsible person for the buying process, sales, margins, quantity sold and potential
3. What **segments** of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
  - See above
  - Segments are furthermore divided into 4 groups: metalworking, woodworking, rubber and plastic and glass and stone which are further subdivided according to their needs
  - Could be combined with credit info data
  - Also, there is a grouping for industrial segmentation that should be the same for the whole Industry & Transportation department
4. What dimensions (methods) are used to segment markets? Why?
  - At the moment only very basic segmentation based on gut feeling

5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
  - Not useful at all, but also not very time consuming
  - Looked at by management, for decisions within the department it is not used at all
  - Data based on gut feeling, no market research available that could serve as a basis
  - Probably reliable tool since it is in place for a long time and company experiences date back 20 years
  
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
  - It is possible
  - First level should be worked out by each department – for ASD already done for the two most important segments
  - Second level can be used company-wide according to codes that have been established with NACE and ISIC
  - Companies need to be sorted according to codes and then be transferred into the first level where filtration can take place → appropriate, easy to use IT system needed
  
7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
  - Partly based on research
  - Currently sales representatives are visiting customers (400-500) to get information first hand
  - More market data and information about competitors would be needed
  
8. How frequently are **updates** obtained? Do you think this is sufficient?
  - Right now it is sufficient, future approach would need updates very often
  
9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
  - No, rather gut feeling
  - Would like to do so in the future

10. How do you assess **competitors**?

- No tool in place, but urgently needed
- Sales representative try to get a feeling for competitive environment and share information

11. How do you evaluate your present **marketing efforts**?

- Currently satisfactory for a new product, one 3M representative is out in the field, trying to advertise the product and gathering company information, overall, more could be done → segmentation would be a great help to target marketing efforts more effectively

12. Other topics discussed / **Impressions**

- It is very obvious that current segmentation approaches are considered as being insufficient → focus on smaller groups and the need to know which size and needs companies have was stressed
- Besides the AOEM segment, no penetration or channels are known
- The CEE planning tool was considered not useful and the entries are based on gut feeling exclusively → no market research is taken into consideration here and the tool is considered as being not useful to the department at all
- A corporate segmentation approach is deemed to be a good idea and it is liked that it is based on research, individual segmentation is absolutely necessary though, because segments differ greatly → this level of the segmentation process could be the same throughout the company
- Interest was also raised in gathering more information about customer's customers in order to influence those as well and learn more about their needs. Nevertheless, collecting information is rather difficult
- It is regarded to be a big problem that not more information about competitors is available. A tool, which allows for constant observation and tracking of competitors' behavior and actions is wished for
- The current marketing activity regarding the demonstrator who is visiting companies introducing the new product and simultaneously gathering an insight into the company and their needs and activities is considered a great success. Products could be sold, new customers could be won (converting them to 3M is often very difficult) and valuable information about their behavior and needs was received. Observation of company onsite if therefore evaluated as being costly but highly beneficial. Overall, sales representatives were named to be indispensable in the segmentation process and so far their willingness to contribute; even though it is extra work for them, is regarded as good
- Lack of information about the market was mentioned various times throughout the interview
- Interest and usage of a segmentation tool was clearly stressed, however, the tool needs to be easy to handle, prioritizing has to be clear and not too time-consuming and it must be updated frequently. At the moment, ideas seem to be good but the process lacks execution

## 2) Interview with AAD Sales and Marketing Managers

1. How important do you think **market segmentation** is for 3M? Why?
  - For 3M segmentation is important, for AAD's core business paintshops (approximately 1000 in the Czech Republic) it is less important because a very good knowledge about them is perceived to exist and information is already kept in a database and their behavior and needs are fairly similar
  - General industry is the most opportunistic segment more information is needed about, especially because of the wide product portfolio
2. What is your typical **customer profile**?
  - Paintshops are the core business, they all have similar needs and main descriptive variables about them have been gathered and are constantly updated
  - Other segments include car wash, general industry, etc. of which "industry" is the one with the most potential and where segmentation and help from other departments is needed the most
3. What **segments** of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
  - For paintshops unique needs are known and gathered in a detailed penetration matrix → potential can be seen by comparing number of repairs with material used
  - Paintshops are segmented according to A, B and C (depending on size, equipment, number of employees) → further segmentation according to top 100 (due to number of repairs, taken care of by sales representatives)
4. What dimensions (methods) are used to segment markets? Why?
  - Sales representatives are the key for success, they gather information and enter it into a detailed database which is also updated frequently (3 direct sales representatives are the most useful source, employees of distributors can sometimes be of help, especially regarding the information sharing of competitors)
5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
  - Not helpful at all
  - Too old, new toolkit available and used as of 2012

- New toolkit seems to be better but experiences are yet to be gathered (better and more relevant questions to be answered here)
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
    - Yes, but help of the other departments is needed and therefore it is also essential for AAD to train them on the products (more than 700 SKUs within the department)
    - Outcome has to be simple to use and understand
    - First potential segments should become visible, then the concrete companies, and in a next step marketing activities can be tailored accordingly
  7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
    - Sales people ask and observe paintshops directly and report findings
    - NACE and ISIC or other external resources could be used to check if all customers are indeed considered and to identify gaps and trends in the market
  8. How frequently are **updates** obtained? Do you think this is sufficient?
    - Sales people visit approximately 100 accounts each month and updates are immediately entered into the database → this results in A & B class paintshops being visited and updated approximately 2-3 times a year and C accounts every one or two years (often one-man businesses)
  9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
    - For paintshops yes, the rest is not based on research
  10. How do you assess **competitors**?
    - Only through sales personnel and their findings
    - Feeling that competitors' actions are observed to a decent extent, no great danger
  11. How do you evaluate your present **marketing efforts**?
  12. Other topics discussed / **Impressions**
    - The existing database or penetration matrix containing details of the paintshops is a very important tool that is used frequently. It contains contact

details, information about products, commodities, market shares etc. and it is indeed used for promotional activities and planning of marketing campaigns

- Due to the huge importance of paintshops for the AAD department, segmentation seems to be a slightly less important topic here than in the other departments. However, trend of decreasing potential of this segment is visible but due to the large product portfolio, the general industry offers great opportunities for this segment as well because the same products could be used for different purposes there
- With regards to paintshops, needs are rather neglected in the analysis because one is convinced that there are no variations and needs are the same for all paintshops since this segment is very homogenous
- A segmentation tool for the “industry” segment is needed in order to clearly identify opportunities and potential within this broad segment. However, one has to be careful with the variations in the distribution channels, often other departments use different channels
- The department wishes to have more external resources to refer to, the only way this could be achieved is seen in visiting the accounts directly and gather data through questionnaires and observations

### 3) Interview with ASD Sales and Marketing Supervisor

1. How important do you think **market segmentation** is for 3M? Why?
  - Very important
  - Right now it is not based enough on market research
2. What is your typical **customer profile**?
  - Not discussed again, same as mentioned by colleague before
3. What **segments** of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
  - See above
  - Metalworking is the most important one
  - It is further important to always monitor the automotive industry
4. What dimensions (methods) are used to segment markets? Why?
  - At the moment only very basic segmentation based on gut feeling
5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
  - It is not that bad, but also not particularly useful since no customer insights are included
  - The new tool is much better but very very time-consuming, however, if used correctly it can really be helpful. But it is absolutely essential to gather customer insight and the interviewee sees no other way than to personally go and visit some of the accounts each year in order to get a better feeling for their needs. Each year, the estimates would become more precise due to the increasing amount of customers visited
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
  - Not much needed to complete 'ideal segmentation' in this department
  - Recommended: Excel file needed which allows for 1. Identification of the industry 2. Selection of level of potential ASD sales (filtration necessary to find out) 3. Final Product

- Problem: How to include needs-based segmentation? Needs would have to be assigned to each segment within the first level segmentation done by the ASD department → possible, but time consuming
  - Combination with CRM data recommended (available from Oracle)
7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
- Mainly based on sales representatives, coding of NACE would, however, be combinable with existing first level segmentation
8. How frequently are **updates** obtained? Do you think this is sufficient?
- Right now it is ok, future approach would need updates probably at least 2 times a year
9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
- No, rather gut feeling
  - Would like to do so in the future
10. How do you assess **competitors**?
- No tool in place, but urgently needed
11. How do you evaluate your present **marketing efforts**?
12. Other topics discussed / **Impressions**
- The ASD department clearly is not satisfied with the current segmentation procedures being in place because these cannot be used for identification of trends and because they are not based on proper research
  - One is convinced that it is possible to develop a segmentation scheme that would work well for ASD without too much effort (NACE coding can be used without any problems), but more information about customers and market developments are needed and thus research needs to be conducted
  - Sole reliance on sales people (3 direct sales people + 1 demonstrator currently in the field) seems to be impossible due to “blindness” of sales personnel, outsider should try to get into the field to try to overcome these biases
  - More knowledge about channels is wished for → deep dive planned for autumn of 2012, almost no details about concrete execution available at the moment



#### 4) Interview with IATD Sales and Marketing Manager

1. How important do you think **market segmentation** is for 3M? Why?
  - Generally very important, especially for IATD, but it is often close to impossible to segment the market for tapes and adhesives
2. What is your typical **customer profile**?
  - IATD is the most complex department because industrial tapes and adhesives are used pretty much everywhere and in every industry
  - 20 commodities (consumable and engineered): some have one purpose and are designed for one market only, others have one purpose but serve multiple markets, or there are multipurpose products that serve either one single segment or multiple segments (most products fall into this category)
  - Nowadays, price is a critical issue: 3M only offers premium products, but not all customers actually need such high quality products and prefer a cheaper, competitive product → it is absolutely critical to know the needs but this is a very difficult task
3. What **segments** of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
  - Defining segments for products that have one purpose and serve one market is relatively easy. It would, however, be good to go one step further and also gather information about end-users (which is currently not done)
  - Multipurpose products that serve a single market: important that it is sustainable and customers really need the high-quality product. If they are likely to switch to a cheaper competitive product in the near future, it might not be worth it to penetrate this customer
  - Most difficult is segmentation of multipurpose products that serve multiple markets: automotive is a big part of them, so this segment is important. The problem is that these products are often not used by definition and this should be respected in the segmentation strategy → needs need to be determined through direct questioning, it was claimed that there is no other way
  - The following industries have been defined as being the most relevant ones: Transportation, Automotive, Label Converters, Electronics
4. What dimensions (methods) are used to segment markets? Why?
  - Single purpose versus multiple purposes
  - Serving a single market versus serving multiple markets
  - Consumable versus engineered solution
  - Long-term versus short-term application

5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
  - The new toolkit is much more relevant, the old CEE planning toolkit was rather useless
  - A problem is that also the new toolkit requires generalization which is often difficult/impossible in the IATD department
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
  - For some of the industries research has been conducted but not for all and more relevant and detailed research is considered inevitable
  - For the transportation industry complete research was done
  - In the electronics segment, a detailed analysis of two major key accounts took place
8. How frequently are **updates** obtained? Do you think this is sufficient?
  - Sometimes but not often enough
9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
  - Information is often received through partners
10. How do you assess **competitors**?
  - For some products it is easier than for others (e.g. for label in the automotive industry it can be checked which parts need a label according to the law and that way, companies using labels to produce car parts can be identified)
  - Label converters also share information about competitors from time to time
11. How do you evaluate your present **marketing efforts**?
  - Better than before and better than in many other countries where the local IATD departments are struggling even more than 3M in the Czech Republic

## 12. Other topics discussed / **Impressions**

- In comparison to last year, when absolutely no segmentation was done at all in the IATD department, one feels that one is on a good track; however, due to the incredible complexity of this department, segmentation is very difficult and for some segments it might be close to impossible.
- More sources for conducting market insights would be required in order to be more successful
- Problem with reliance on sales personnel: they do not generalize biggest opportunities
- Many different characteristics apply that would be needed for segmentation (e.g. consumable vs. engineered, long-term vs. short-term application etc.)
- The different channels might be a segmentation criteria as well, but it is difficult due to the variety of channels that is used (e.g. direct sales, distributors, authorized distributors, label converters etc.)
- Labels and label converters have been identified as a big potential and more of those potential fields would need to be identified
- Priorities have been defined for this year (transportation, automotive, label converters and electronics industries) but they are not accurately based on enough research and more precise segments have to be identified that the department can focus on
- Requirements for the segmentation process to be implemented are that justifiable generalization becomes possible, segments need to be meaningful and more segments need to be found

## 5) Interview with AD Sales and Marketing Manager

1. How important do you think **market segmentation** is for 3M? Why?
  - Not very important for the automotive department because several segments cannot be influenced due to their administration abroad
2. What is your typical **customer profile**?
  - 350 customers for 5 commodities
  - Only single purpose commodities that serve a single market
3. What **segments** of the market are you trying to serve? What is unique about the specific groups? Do you think this is sufficient/successful? How do you ensure that you are not overlooking small but profitable segments of the market?
  - It is only possible to consider those companies that have the decision-making unit in the Czech Republic – many of the automotive companies

have their R&D abroad and therefore the buying decisions are made abroad as well and cannot be influenced by 3M Czech Republic

4. What dimensions (methods) are used to segment markets? Why?
  - Database with 350 accounts was checked for whether the decision-making unit is in the Czech Republic → those accounts have then been sent an electronic questionnaire and if the results of those were relevant, they would be visited by a 3M sales person, if not they were not considered further
  - The above-mentioned segmentation brought almost no new findings, so it seems as if the current portfolio is fully utilized (out of the 350 potential customers, approximately 55 are active customers)
  - Relevance should be checked once again because the market is constantly changing
5. How helpful is the **CEE planning toolkit** for you? Why? Do you have any recommendations/needs for improvement? Is this the right approach? How do you define low and high suitability (e.g. for channel or product mapping)? Timing? How do you set priorities?
  - The new toolkit is much more relevant, the old CEE planning toolkit was rather useless
6. Do you see a need to **combine descriptive and need-based segmentation** criteria? How could this be done?
7. Are target market definitions based on **research**? What kind of research? How familiar are you with using the databases NACE and ISIC?
  - Partly, see description of the segmentation process above
8. How frequently are **updates** obtained? Do you think this is sufficient?
  - Update would be needed again, last segmentation happened 3 years ago
9. Are product/promotional/pricing/distribution **decisions based on segmentation** research?
  - Often simply not possible due to the importance of the DMU, if DMU is abroad, 3M has not influence
  - For the relevant customers, it is tried to do so
10. How do you assess **competitors**?

- Competitors are measurable fairly well in this department because it contains only a limited number of products
- Close relationships to the accounts and partners and they share information about competitors
- The key is to observe competitors and then offer a product with added value (or it would have to be cheaper, which is not a strategy 3M is pursuing)

11. How do you evaluate your present **marketing efforts**?

12. Other topics discussed / **Impressions**

- Generally, it seems as if customers are known to a great extent in this division, maybe especially because it deals with a smaller number of customers and commodities than other departments
- Only 3 sales people in the field
- The location of the automotive customer's R&D team has a huge impact on 3M's power to influence, because if R&D and thus the DMU is situated abroad, 3M cannot effect the customer from the Czech Republic, colleagues abroad take then care of the negotiations and 3M Česko only delivers the product → for those customers, segmentation does not makes sense and is not needed → location of R&D department therefore is an important segmentation tool
- The last 'segmentation' or consumer insight was done 3 years ago and it is felt that it should be updated and checked again since the local potential for decision-making is increasing and thus there might be opportunities for growth of this sector  
It is felt that the needs are known because each production program matches the product (single purpose)

