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Market Opportunities for Automotive Components Used in Non-automotive Applications Manufacturing

Estonian Industrial Market

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<p>This thesis examines the opportunities available for automotive components in the Estonian non-automotive industrial market.</p> <p>The literature review part is mainly covers the theory of marketing research, because of the approach chosen for this paper. Only small part of marketing research process is researched closer in literature review section, because of the scope of the research. Three most relevant steps for the thesis are chosen from research process for further more investigation, which are: problem definition, development and an approach to the problem, data preparation and analysis. Basic information about entering a new market, measuring the market, buying behaviour and marketing mix are chosen to see what and how opportunities can be found. Another similar research was analysed to see the results for Iberian market research for automotive components that can be used in medical furniture. The final outcome was that the Iberian medical furniture market is an interesting market for technical solution provider, which means that they could aggregate the demand of various manufacturers and offer them customized products.</p> <p>As secondary research, Estonian economic situation, industrial market and manufacture areas are investigated more closely to understand how big the market is and how changes can affect one another. Past and current information have been taken into account to estimate the future. Investigation results show that industrial market for automotive compo-</p>	

nents is rather small, but growing. Manufacture situation is tightly connected to Estonian general industry and economy

The primary research was done by interviewing companies operating in the Estonian manufacturing area and who could use automotive components in their non-automotive applications. As a result of the interviews, 22 respondents were gathered and analysed. Based on the data, the best opportunities seem to be in furniture manufacture at the moment and also for the future, despite the information shown in the secondary data, which shows that furniture manufacture is one of the smallest manufacture groups in Estonia. This knowledge gives more proof that this specific market is small. Annual volumes were another aspect that show the size of the market, which is also small and more suitable for retailers or small suppliers than for bigger direct car parts providers. Growth or steadiness is estimated for the future by the interviewees.

Three recommendations were made as a result of the secondary and primary research: find a partner, investigate the furniture market more closely, and/or enter the market as a technical solution provider. The last outcome was similar to the research done for Iberian medical furniture market.

Keywords

Industrial Production, Estonian Economy, Automotive Components, Non-automotive Industry, Manufacturing, Future

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1 Introduction

Entering a new market with a product existing already and designed for a certain field, but which can be used in different areas of manufacturing, is very common for companies that would like to expand their business. Using already existing products or modifying the same items is one way to do it. This can be more challenging when it comes to finding out what are the areas and which applications can be targeted besides already obvious ones.

Automotive components are included in the products suitable for several applications. Not only vehicles are the target markets for these items. Industrial market is as well a big opportunity for simple car parts. There are many countries or areas that do not have automotive manufacturing, but have a lot of different other manufacturing companies operating. It does not mean that there are no business opportunities for automotive components suppliers, but it can be more challenging to enter the market because of lack of knowledge in the industries and the market in general.

This thesis focuses on market opportunities for automotive components, which are identified later in this paper, which can be used in non-automotive manufacturing. The Estonian market is chosen as a research area, because of its small market, changing economy and personal interest. Another reason for this topic is that no similar research was found in the secondary data for same geographical area.

Researching the general Estonian economic situation, industrial market and manufacturing sector might help to see how these more specific areas are connected to wider ones and hopefully gives an overview of the market size. The emphasis is to analyse the past and current situation on the market and later to estimate the future opportunities by using the secondary and primary research.

1.1 Background

The thesis is written in co-operation with Robert Bosch Oy. Industrial business is one part of automotive technology business sector for Bosch Group, which is a global supplier of automotive and industrial technology, consumer goods and building technology.

Bosch Group consists of three main business sectors: automotive technology, industrial technology, consumer goods and building technology. An automotive technology sector is the largest Bosch business sector. According to the presentation held at the annual press conference on 26 April 2012 by Franz Fehrenbach, former Chairman of the Board of Management of Robert Bosch GmbH, Automotive Technology sector was not the fastest growing area in 2011, but was still holding the biggest percentage of sales revenue share. Figure 1 gives a 2011 sales overview of these three business sectors development in percentages.

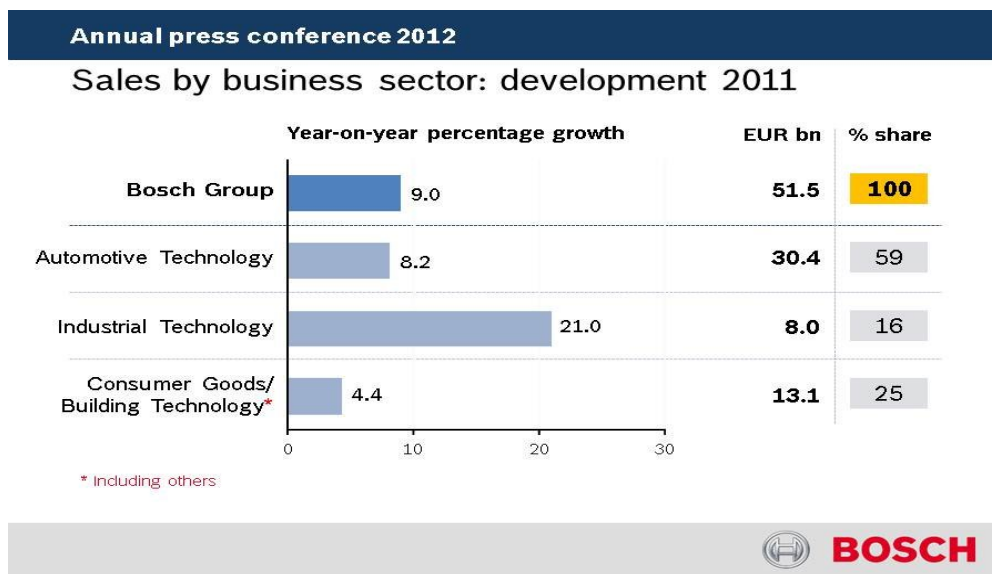


Figure 1. Robert Bosch Group sales by business sectors: development 2011

Within the biggest business sector the main focus is in off- and on-highway automotive businesses, but one part of the automotive technology sector is also industrial business, which is targeting only non-automotive applications. Industrial business is one example of the new market which is not identified as a primary target for this certain business. Despite the secondary importance, it can still be suitable to this area and

might be a big business opportunity for the company, especially for smaller sales areas.

Investigations carried out previously have shown that there are small business opportunities for automotive industry in Estonia. According to European Automobile manufacturers' association, Estonia is concentrating more towards specialist component manufacturing, rather than the assembly of vehicles (ACAE, 2012). The statement, that several other industries are more attractive for automotive components in Estonian market, is set as a hypothesis for this study.

1.2 Objectives

The main objective for this thesis is: **to analyse opportunities that Estonian industrial non-automotive market can offer for vehicle components**. As there is already some information available of the existing market, this research is done to expand the knowledge. The topic will be explored to find out if the assumption of existing and further more growing market is correct. The objective will be determined in terms of market size, volumes and other possible influences that are creating or eliminating the opportunities.

The assumption, that a market exists, has to be proven. Furthermore, the aim is to find out for which suppliers this is the biggest opportunity in terms of size of volumes and customers' buying behaviour. As an outcome of this research is expected that there is a small market available, that is constantly growing.

1.3 Delimitations

The range of components will be limited for the research according to Bosch Group web-site for industrial business within automotive sector. Business opportunities for other components will be taken into account as a secondary importance.

This study will focus on Estonian market. As a result of deeper investigation it will take even into consideration even more specific areas, which are using automotive components in non-automotive applications. Due to the constraints of time and size of re-

search the theory will concentrate on relevant parts of market research and analyse similar already existing research done in this area that support the main body of thesis.

1.4 Research Questions

The thesis seeks for an answer for more than one question, to provide background information for the main question that is stated.

“What are the opportunities available in Estonian non-automotive industrial market for automotive components?”- is the main question that needs to be answered.

Several other topics need to be analysed before answering the main question:

- How does economic situation affects Estonian industrial market and how has it changed over the years?
- How big is the market generally and in terms of volumes and buying preferences by the customers?
- Are there future opportunities available for direct suppliers?

These sub-questions will be discussed and explored during the main body of the research and the primary question will be answered in the conclusion section.

1.5 Research methodology

There are two types of research designs in the marketing research process: an exploratory research and a conclusive research (Mishra, 2008). Exploratory research can cover search for secondary data and literature, survey of knowledgeable persons or experience survey, and case study. Conclusive research can be more descriptive and experimental. The formation of research design is dependent on the nature of problem. Development of a sound research design is combined of seven sub-steps: defining the objectives of the investigation, planning and determining the scope of investigation, developing alternative methods for collection, analysis and interpretation data, estimating the time required, preparing the personnel and administrative set-up, preparing the budget, formulating the research proposal and accepting it (Sontakki, 2010).

Both primary and secondary data need to be covered in case of comprehensive research. Secondary data is not collected to cover the problem that is under discussion, it is collected for some other purposes. This information may be available in the Internet, libraries or for example in CD-ROMs. The sources could be for example published surveys of markets, government publications, Government reports, publications of research organizations, publications of trade associations and so on. It is not always newest information and may have been collected some time ago. To cover the theory and background information secondary data will be used. Information about Estonian economy and industrial market situation provide some examples to be covered with secondary data.

The primary research covers sampling and uses quantitative and qualitative research studies to fulfil its aim. This part of research is usually more time demanding and expensive than secondary data collecting. Primary data is used to understand the market, by collecting information in several areas, such as: customers buying behaviour, market size in terms of volumes, and future of Estonian industrial market through the eyes of operating companies.

2 Literature review

This literature review section covers six topics. Firstly, it will take a closer look at marketing research process, which theory helps to underpin the achievement of the objective. Marketing research process will include deeper information about three steps: problem definition, development and an approach to the problem, data preparation and analysis. Opportunities and difficulties of entering a new market will be analysed in next section. Afterwards importance of market measuring, understanding of organizational buying behaviour and marketing mix will be discussed more closely. These three topics, mentioned below, are building a theoretical base for secondary and primary research needs. Lastly, theory part will examine the previous research in industrial market research, which has been done for small market and specific applications that uses automotive components in their production.

2.1 Marketing research process

According to the European Society for Opinion and Marketing Research (ESOMAR), marketing research is defined to be a key element within the total field of marketing information. It links the consumer, customer and public to the marketer through information which is used to identify and define marketing opportunities and problems; to generate, refine and evaluate marketing actions; and to improve understanding of marketing as a process and of the ways in which specific marketing activities can be made more effective (Malhotra, Birks, 2006). Marketing research process is divided into certain steps.

Mr. Birks and Mr. Malhotra (2006) explain marketing research process through six steps: problem definition, research approach developed, research design developed fieldwork or data collection, data preparation and analysis, report preparation and presentation. It is still not only about finding the problem, but more important is to understand and define a problem (Malhotra, Birks, 2006). Every book does not name these steps always in a same way, but the concept stays the same. Some theories include also seventh step- follow-up recommendation (Sontakki, 2010). Three research

processes will be monitored closer in this section to guide the achievement of the objective.

2.1.1 Problem definition

Defining the research problem is the first step of the process. This is the part where problem is defined and analysed. Importance of analysing the situation is to get an overview of the problem, which has done by marketing decision-makers and marketing researchers. Idea is to find out what possible problems they face and what kind of research support they need. Defining a research problem can be divided into three sub-steps: discovering the managerial problems, refining and redefining, and translating the managerial problems in to research problems (Sontakki 2010). Once the problem and need for research have been properly defined, researcher is able to move on to the second step- considering the possible solutions.

2.1.2 Development and an approach to the problem

Development and an approach to the problem can also be called as preliminary investigation (Sherlekar, Sherlekar, 2010). During this period researcher will take a closer look at background information, by meeting the dealers, consumers, suppliers and customers to get better overview and understanding of most critical issues. This is the stage where theoretical framework needs to be selected, adapted and developed. First it sets the hypothesis that helps to indicate the factors which are more important and makes investigation and analyses more restricted.

2.1.3 Data preparation and analysis

Data preparation and analysis stage can be done only after all of the data is processed. In this step data editing, coding, transcription and verification will be covered by the researchers. In most cases research includes quantitative and qualitative research to get more accurate outcome. After analysing all the data it makes situation easier for researchers and they are more likely able to prove or disapprove the hypothesis.

2.2 Entering a new market

Andrew Whalley (2010), lecturer in marketing at Royal Holloway University of London, has explained market development as a growth strategy where the business seeks to sell its existing products into new markets. He explains that there are several ways to do it, but brings out four of them in his book of strategic marketing. First option would be to seek new geographical markets to export the products into new country. Another way could be applied when supplier understands better the buying behaviour and customer's decision making process. In this case new product dimensions, packaging or different price could be applied to enter new market more successfully. Fourth opportunity could be to use new distribution channels.

After finding an existing market, there is another option that can help to locate the business into this area: product development. Product development might require that there are new modifications added to already existing products or even starting new product from the scratch that can be offered to the existing market according to demand of customer.

Diversification is the riskiest growth strategy for the company. In this case, supplier enters a new market, in which they do not have any experience beforehand, and also offering a new product that is specially produced for this purpose. More detailed market research is needed in case of diversification to cut the negative risk percentage.

In next sections, there are three topics discussed: measuring the market, buying behaviour, and marketing mix. These topics are giving better overview of what have to be taken into account eliminating the negative risk.

2.3 Measuring the market

What is market and why do we have to measure it? Internet Centre for Management and Administration (2010) explains the term market, in marketing concept, as the group of consumers or organizations that are interested in the product, has the resources to purchase the product, and is permitted by law and other regulations to acquire the product. It is important to know the size of market to understand how many customers

there may be available, how often do they consume and how much. Not only the present needed to be considered, but also past and especially future.

After answering the question, why market is needed to be measured, the following issue is to find out how it is measured. Three key measures of a market are: size of the market in value and volume terms, the trend in the market size, and the market share (Murray, O'Driscoll, 1996). It is also necessary to consider these by market segments to get these three measures more effective.

Every marketer should know answer to next three important questions while choosing a market segment:

- Which criteria to use?
- What factors to use while identifying a market segments?
- How to develop segmentation analysis?

The criteria can help to select suitable market segments and evaluates its feasibility. A segments have to be measurable, accessible, substantial, profitable, compatible with competition, effective and defendable (Paley, 2007).

2.4 Organizational buying behaviour

Organizational buying is defined by Webster and Wind as the decision-making process by which formal organizations establish the need for purchased products and services and identify, evaluate, and choose among alternative brands and suppliers (Webster, Wind, 1972).

According to Patrick J. Robinson theory buyer has to consider three types of buying situations while making their decisions: the straight rebuy, the modified rebuy, and the new task (Kotler, 1997). In case of straight rebuy purchaser reorders goods in routine basis and choose suppliers relying on experiences from the past. Modified rebuy is the case when buyer decides to make changes in certain areas like prices, delivery requirements or for example in product specifications. Buyer is trying to find better and more suitable options for company by exploring different solutions. The third type is new task, which means that purchaser is buying this certain product or service for first time and goes through five different stages: awareness, interest, evaluation, trial, and adaption (Kotler, 1997). The last type is considered to be most challenging one out of

these three. In case of entering new market, supplier has to be aware of which criteria is the most important for customer.

2.5 Marketing-mix

Marketing mix is one important part of organizations decision making process. Neil Borden made marketing mix, which is also mentioned as four P's of marketing, more known and popular among marketing world by mentioning it in his article. Four P's consists of product, place, price and promotion (Kermally, 2004). Figuring out why, from where, what to buy and in what price are the decisions that customer need to make before purchasing. Companies can prioritize these elements differently- some see that quality is the most important, others again seek for lower price and do not put that much of a pressure on quality or distance from country of origin. These four levers are the classical ones and help suppliers to understand better customer's decision making process. As marketing has become more complicated, some claim that only four categories are not sufficiently useful by themselves anymore. Nowadays some theories add fifth P into marketing mix, which is- positioning (Ruskin-Brown, 2006). Positioning lever is "strategic" and also includes segmentation and targeting.

According to Robert Lauterborn's theory four P's correspond to the customers 4 C's, which are customer needs and wants, cost to the customer, convenience and communication (Kotler 1997):

Product corresponds to customer needs and wants. This is the part of decision making where customer or consumer takes into account several details like product variety, quality, design, features, brand name, packaging, size, warranties and returns.

Price is the category when purchaser has to think about the cost. This covers the whole picture of what customer is willing to pay out and how much they will make profit after all the costs. In this case list price, discounts, allowances, payment periods and credit terms need to be taken into consideration.

Promotion is in tight connection with convenience. Promotional part should give out enough information to a customer and at the same time keep it relevantly simple for them. Sales promotion, advertising, sales force, public relations, direct marketing- these are the ways that supplier can use while covering customers information needs.

Place is the part which corresponds with communication part of 4 C's. Channels, coverage, assortments, locations, inventory and transport can bring customer closer supplier even if sometimes distance in reality is longer.

Positioning or STP (segmentation, targeting, positioning) was not mentioned by McCarthy and Borden. Still it is nowadays included to marketing mix as a fifth "P". This step is more relevant for suppliers to define clearly who the possible customers are and where do company find them, but it is not part of customers or consumers decision making process.

2.6 Previous research in the industrial market accessible for automotive products

There has been done similar research before for Bosch Group before in September 2011. This paper is analysing the Iberian medical furniture market as potential industrial business key market. That is the closest research which matches the purpose of this study. This previous study was targeting more generally use of electrical DC motors which can be used for example to actuate an adjustment system of nursing or hospital beds.

The research of Iberian medical furniture market was divided into four topics: the medical furniture market accessible to Bosch products, trends and expectations for the medical furniture market, the Spanish medical equipment and health technology market, and main suppliers for motors and drivers within the Iberian medical furniture market. In first part product range of the Iberian accessible market and existing industrial business applications in the medical furniture section are identified. Also other suppliers in this area are defined to see how big the market available and how many companies compete in this area are. In trends and expectation section ageing population, lifestyle disease and obesity phenomenon is discussed. This gives the overview of the market and shows how surrounding factors are creating the need for medical furniture and creating market opportunities for the components.

The result shows that in general medical furniture market is reflecting positive trends in the health care section. This research brings out four main reasons because of what progressive rising demand can be expected: aging population, obesity rate, life style diseases and demand for highly automated products. The last point is the most influencing. Researcher explains that increased number of patients means high pressure




on hospitals, clinics and medical offices, which have to look for a way to handle this challenging situation. Another trend is in the wellness sector, which is favouring the sales of medical furniture offering high comfort.



Despite the trend factors the demand for motors was not high. According to research in 2011, the Spanish market is dominated by small and medium sized enterprises. Therefore annual need in volumes is low. The final outcome was that the Iberian medical furniture market is an interesting market for technical solution provider, which means that they could aggregate the demand of various manufacturers and offer them customized products.

3 Automotive products identification

This section will give overview of some of the automotive components that can be used in non-automotive purpose. Components that will be monitored for this research are defined according to Robert Bosch Industrial Business web-site and include five main automotive components that are used in industrial business: electric motors, sensors, relays, switches and industrial spark plugs.

Table 1 Automotive components usage

 <p>Figure 2. Electric motors</p>	<p>The biggest product group is electric motors, which operate with harmless extra-low voltages of 12 and 24 volts. Its large number of sizes and power stages allows targeting larger number of applications, e.g. for adjusting devices for the office, home or nursing sector.</p>
 <p>Figure 3. Sensors</p>	<p>The area in which sensors can be used is wide because of its characteristics. Sensors ability is to test, control, regulate, monitor and supply computer with physical data. These can be used easily in everyday objects such as regulative lamps or touch-sensitive elevator buttons.</p>
 <p>Figure 4. Relays</p>	<p>Relays and lifting magnets are also used for industrial applications. Relays give the possibility to switch components with a 12 or 24 voltage ranges, which helps them to fit into several applications, such as automatic sliding doors, electric wheelchairs, materials handling and electric motors.</p>

 <p>Figure 5. Switches</p>	<p>Switches can be found in robotic applications and almost in every household. Its main task is to turn on and of electric circuit and is used in industrial applications for sensing a metal part.</p>
 <p>Figure 6. Spark Plugs</p>	<p>Large variety of spark plugs is available for industrial businesses. For example, these can be used in natural gas compression and power generator facilities, because of its ability of handling electricity, hot water and heat.</p>

All of these components are mainly used in automotive on-highway and/or off-highway business. The problem in targeting other markets, which are not originally planned for these items, is the information availability of which applications these could be used in and what are the companies that are operating in these areas. Not only targeting the right application and company is an issue, when entering this market, but also to figure out which components can be suitable in there. Main aim in this research is to find out possible market opportunities for these five components mentioned above, but at the same time, as another aim, is to spot new possible usages for other automotive components that can also be suitable for industrial applications. The variety of different automotive components is wide and that's why it is not easy to target all possible applications that might be available. Batteries, belts, brake pads, engine management systems, filters, lightnings, wiper blades- these are some of the examples that automotive division might also offer, besides these five main components, to industrial market if suitable application is found.

Often it might be that already existing components need some modification to be suitable for certain application. In this case it might be future opportunity for the supplier if this modification is possible by a company according to customers needs.

Customer needs to have high demand regarding volumes that it would make this change profitable and attractive for the supplier.

In this section, five main components has been identified for this research: electric motors, sensors, relays, switches and industrial spark plugs. Besides these there has been brought out some other possible components which are already existing and also an opportunity that is available when using existing components and adding some modifications according to market demand. The next section of this study will look at industrial markets which are involved in the use of these products and take a closer look at applications that can be targeted.

4 Estonian market

In this section I will analyse current data that is available on Estonian industrial market and economical situation and dig more closely the information given about manufacturing area. Later on this help to identify what are the potential applications where automotive components could fit in and how these areas can be changes in future. Potentially suitable markets have to cover next criteria:

- Production is located in Estonia
- Applications use automotive parts
- Products are used in non-automotive application

4.1 Estonian Industrial Market in General

The section will use product index indicator to see how situation has changed in Estonia since 2001 and what are the influences that have affected the results over the time. Statistics of industrial production index and change in percentage has been used to get better overview of the situation. According to the Eurostat (statistical office of the European Union) web-site the industrial production index shows the output and activity of the industry sector. It measures changes in the volume of output on a monthly basis. A data is compiled according to the statistical classification of economic activities in the European Community (Statistical Office of the European Union, 2012).

Industrial market includes next areas:

- Electricity, steam and hot water supply
- Mining
- Manufacturing
- Materials recovery
- Intermediate goods
- Capital goods
- Consumer durables
- Consumer non-durables
- Energy

4.1.1 Past situation (2001-2010)

Estonian Industrial production growth was rather stable since 2001 until 2005. In 2006 it started to fall slowly until 2008, when Estonia's economy fell into recession in mid-2008. Growth rate was continuing to be negative until 2010. Even though the main reason for this was collapse in real estate market, it affected the whole Estonian economy, including industrial sector. Estonian market returned to positive growth rate in 2010, when external demand increased and export growth went up (Estonian Ministry of Foreign Affairs, 2011).



Figure 7. Estonian industrial production change 2002-2010 (percentages)

4.1.2 Current situation (2011-2012)

According to the CIA (Central Intelligence Agency) the World Factbook (2012), Estonian industrial production growth rate was 18% in 2011. This percentage includes manufacturing, mining and construction and gives annual percentage increase in industrial production. In country comparison Estonia locates in third place in the world (CIA, 2012) (date of information might be different for countries).

Estonia took the euro into use as currency in 1 January 2011 (Official Gateway to Estonia, 2011). This encouraged more foreign business to invest into Estonian market and made it more attractive. Not only had it given boost and confidence to foreign companies, but also to local companies as they can rely more on euro zone countries.

Companies' internationalization became easier and foreign market is now more accessible. Foreign exports increased as a result of accepting new currency.

Despite the attractiveness of euro as a currency, Estonia is again facing a downstream in economy and this affects industrial market heavily. Industrial production in Estonia decreased 6.1 percentages in March 2012. In autumn 2011 economy started to slow down because of financial crisis. Industrial companies in Estonia are rather small and medium-sized and situation in Europe and World affects these companies negatively as their customers are more cautious of the situation.



Figure 8. Estonian industrial production change 1/2011 - 6/2012 (percentages)

4.1.3 Future estimations

As economic situation has been changing quick and affecting also industrial market, it is difficult to find information on industrial production change for future. In The Baltic Course article 15 June 2012 Juhan Tere writes that about 87 % of Estonian industrial companies are rather optimistic about the future and expect to have even higher turnover in 2012 than they had in 2011.

Estonia.eu (2012) states that according to the 2012 forecast of the Estonian Ministry of Finance, the Estonian economy will grow by 1.7% in 2012. In 2014-2016 Estonian economic growth is expected to stabilise at around 3.5%

Table 2. Growth and associated factors 2011-2016

	2011	2012*	2013*	2014*	2015*	2016*
GDP real growth (%)	7.6	1.7	3.0	3.4	3.5	3.5
GDP (in nominal terms, billion EUR)	16.0	16.7	17.7	18.8	20.0	21.2
GDP deflator (%)	3.7	2.6	3.1	2.7	2.7	2.7
Consumer price index (%)	5.0	3.3	3.0	2.7	2.7	2.7

Estonian Ministry of Finance expects stable economic growth after year 2012 until 2016 and high percentage of Industrial companies are optimistic about future turnover. As from previous research we can see that industrial production growth has been affected by general situation in Estonian and World economy, we can expect the similar pattern for the future.

4.2 Manufacturing in Estonia

Four suitable production areas are identified in table 3. These mentioned areas are potential markets, for automotive components.

Table 3. Industrial applications

Medical and rehabilitation applications	Hospital beds and nursing beds Wheelchairs and hoists
Building systems	Garage door openers Roller shutter drives Window adjustment Electric door closing devices

Drive units	Electric mopeds Drives for golf carts Mechanical sweepers Lawn mowers
Industrial applications	Linear actuators Positioning mechanisms Closing and output systems

These applications can be suitable for manufacturing groups of industrial market:

- Manufacture of electrical equipment
- Manufacture of furniture
- Manufacture of motor vehicles
- Manufacture of machinery and equipment

In this part of the research, production areas are identified and we can move on to cover statistics about general industrial market situation in Estonia. To get more accurate picture of industrial production market, more detail information will be analysed about already mentioned four manufacturing areas. Compare these to other types of manufacturing in Estonia during first half of year 2012 and also to 2011 volume index regarding these specific areas will help us to understand better how future of industrial market looks like and what are the opportunities for automotive components in this area.

As already mentioned before, automotive components can target four manufacturing areas: motor vehicles, electrical equipment, machinery and equipment, and furniture. Information about volume index of production for these four areas is used to compare 2011 first half of the year volume indexes to 2012. Statistics is provided by Statistics Estonia (abbreviation SE), which is a government agency at the area of administration of the Ministry of Finance.

Table 4 includes some of the manufacturing groups that have been presented in Estonia in 2012 until the end of June to compare different industries. This helps to find out in which place four already identified production areas are located in. Out of these four groups, that we are targeting, motor vehicles, trailers and semi-trailers have the biggest volume in this time period. In overall results it is located in second place after computer, electronics and optical products. Electrical equipment and machinery are ranking high as well compared to most of groups. Furniture, which is rather small group for automotive components, is only group, out of these four, that is located in the back part of the table with volume index of 537, 6. From these results, we can see that most of the biggest volumes are produced in the areas that are suitable for automotive division industrial business.

In table 5 we can see the 2012 results compared to 2011 first half of the year. The biggest volume increase is happening in electrical equipment manufacturing compared to same months in previous year. Even though motor vehicles manufacturing is located in second place in overall manufacturing table in 2012, volumes of this sector are dropping the most out of these four manufacturing areas. Change in furniture manufacturing is rather small and volumes stay more or less the same as year ago. Machinery and equipment manufacturing is changing a lot over the months. In 2011 there was stable increase regarding volumes. In 2012 started with promising results, but dropped in April and March. June 2012 looks again better for machinery production. The overall results for six months have grown for electrical equipment, machinery and furniture. Volume index for motor vehicles has decreased compared to previous year.

Table 4 Volume Index of Industrial Production, 2005 = 100 by Year, Economic activity (EMTAK 2008) and Month

2012	Jan	Feb	Mar	Apr	May	Jun	Jan-Jun
Manufacturing of...							
...computer, electronic and optical products	571,2	660	610	597,9	618,4	582,6	3640,1
...motor vehicles, trailers and semi-trailers	185,1	190,9	227,8	220,1	217,9	218,3	1260,1
...grain mill products	170,7	163,4	179,5	174,7	190	191,5	1069,8
...electrical equipment	161,8	156	176,7	171,9	187,4	164,8	1018,6
...basic pharmaceutical products	153,1	121,8	155,6	162,2	160,9	173,4	927
...machinery and equipment	130,7	146,8	161,9	143,7	147,1	180,2	910,4
...other food products	128,4	135,8	152,5	153,1	148,6	151,6	870
...refined petroleum products	139,9	129,3	153,5	97,7	104,5	177,8	802,7
...paper and paper products	129,2	120,1	131,1	126,6	132,7	119,4	759,1
...basic metals	109,6	95,2	106,4	105,2	115,9	103,3	635,6
...other transport equipment	46,9	93,4	69,9	79,1	219,5	112,5	621,3
...food products	93,8	95,8	100,3	97,9	104,5	98,3	590,6
...chemicals and chemical products	99,8	79	93,5	100,4	114,3	102	589
...textiles	93,4	96,8	105,6	85,3	105,3	102,4	588,8
...rubber and plastic products	89,2	89,2	104,4	102,3	107,6	94,8	587,5
...fabricated metal products	86,9	81	101,4	101,1	108,9	108,1	587,4
...wood and wood products	89,4	84,2	109,4	96,1	108,6	97,9	585,6

...furniture	88,9	85,8	101,8	85,6	93,7	81,8	537,6
...leather and related products	86,9	77,8	88,5	82,5	87,5	92,9	516,1
...other non-metallic mineral products	59,5	53,4	66,3	71,2	85,7	88,7	424,8
...wearing apparel	63,5	67,3	60,5	55,5	65,5	76	388,3
...computers and peripheral equipment	34,3	32,5	38	28,7	34,9	37,4	205,8

Table 5. Volume Index of Industrial Production, 2005 = 100 by Economic Activity (EMTAK 2008), Year and Month

Manufacturing of ...		Jan	Feb	Mar	Apr	May	Jun
... electrical equipment	2011	130,8	133,1	164,5	142,3	159,1	147,4
	2012	161,8	156	176,7	171,9	187,4	164,8
	change	31	22,9	12,2	29,6	28,3	17,4
... machinery and equipment	2011	96,8	115,4	142,2	143,8	149,5	164,3
	2012	130,7	146,8	161,9	143,7	147,1	180,2
	change	33,9	31,4	19,7	-0,1	-2,4	15,9
... motor vehicles, trailers and semi-trailers	2011	214,4	206,1	249,8	226,3	229,9	225,7
	2012	185,1	190,9	227,8	220,1	217,9	218,3
	change	-29,3	-15,2	-22	-6,2	-12	-7,4
...of furniture	2011	85,3	85,7	102,1	86,7	89,8	78,8
	2012	88,9	85,8	101,8	85,6	93,7	81,8
	change	3,6	0,1	-0,3	-1,1	3,9	3

4.3 Summary of Estonian market situation

The automotive products were described and the main industrial markets for these items were highlighted. By looking at general industrial market situation gave better understanding of what can influence the overall industry and what the future might look like. Industry is affected by foreign demand and local economic situation. Within all industrial areas, mining and electricity are mostly affected by current financial crisis in the Europe and manufacturing is rather more independent.

This paper focuses more on manufacturing area. Surrounding crisis and foreign demand is important factor for manufactory. Current economic situation is cooling down the demand, because of consumer's insecurity, but keeps business still active and more unpredictable.

Most industrial companies see positive increase in sales compared to previous year despite of some difficulties. There is stable increase expected in real Gross domestic product (abbreviation GDB) for next four years. Out of four production areas, that was most suitable for automotive components, only motor vehicle and trailer manufacturing volume index is negative compared to previous year. Despite the negative movement, it is still located as one of the top manufacturing area compared to others. The other three markets are increasing.

5 Further market insights

Even though the secondary data provided useful information regarding industrial market and manufacturing situation generally, information is not specific enough and is difficult to find. To gain better understanding and more accurate information of the non-automotive industrial market, which automotive companies can target with their products, qualitative research is needed. Primary data is collected from the companies that are operating in industrial market in Estonia and might be possible targets for automotive components. Public company listings, that are available in internet, and personal social networks were used to locate companies, that can fit the criteria, for primary research.

The primary research involves two steps: collecting data and analysing data. Telephone interviews and questionnaires, which were sent out by e-mail, were used to collect data. Research is carried out to collect information for specific reasons, which is used to support secondary data that was gathered from public sources. In case of this research, qualitative research was needed to get more accurate information regarding market opportunities for automotive components that are used in non-automotive applications.

Due to a small market available, because of limited geographic area and specific market, not many companies were found for the interviews. Despite the small number of respondents, the sample is still valid and represents the high percentage of real number of companies that are operating in Estonian industrial manufacturing market. Some of the companies could not be reached by phone or was not able to answer questions at this point of time. Questionnaires were sent by e-mail to these companies. Rest of the respondents was interviewed over the phone.

5.1 Phone interviews

Out of all possible interview types, phone interview was selected as a primary method when collecting the data. This option was chosen because of its advantages over other types. The biggest advantages of having interview over the phone, not face-to-face, are

time and cost. As in this case the market is located in different country than is the location of researcher, face-to-face interview gets logistically more complicated. Most of the companies that were interviewed were not in the same area in Estonia. Rather large sample was chosen for the research and face-to-face interview with each company would have been too time-consuming. Having interview by calling the person directly has also its advantages over the paper version of questionnaire that is sent either by post or by e-mail. E-mail or questionnaire can be easily forgotten or ignored by the respondent. Getting quick and efficient answer is easiest by phone and more comfortable for both sides- to interviewee and interviewer.

Some problems came up when having interview by phone. The biggest disadvantage was that person, who answered the call, was not often the person, who is familiar with the topic. In some cases, they could not know at this moment, whom to contact and who could be the right colleague of his/hers that most likely can answer the questions. All of these situations were eventually solved out and responsible person was found. The second problem appeared when some of the respondent felt themselves uncomfortable when using the telephone and it made theme nervous in the beginning. Also this problem was eliminated later on during the phone interview and interviewees got more relaxed and were willing to give the answers.

Questionnaire was used as a base of the interview. Before each interview, Pre-Interview Statement was told and methods of the interview were explained. The interview followed as a next step. All the interviews were conducted in Estonian language and were identical in nature. Results of the phone interviews were recorded in written to the paper copy of research questions form.

Pre-Interview Statement is added as an Appendix 2 and interview questions are identified according to questionnaire that is added as an Appendix 1.

The recipients were picked according to public company lists available in internet. As there was no clear information available about manufacturing for each company, these were still included in list as possible targets. Not only these four main manufacturing areas, identified above, were covered, but also some other options were considered when choosing companies for interview.

5.1.1 Interview results

Twenty phone interviews were conducted. Eight respondents were reached by phone. Three interviewees asked to send questionnaire by e-mail and twelve companies could not be reached by phone. Questionnaire was sent by e-mail also to these companies.

Out of five companies two do not have production in Estonia and one does not use automotive components in their applications at this point of time. Two companies met the criteria.

Primary research was done in June and in early August, which might be the reason why such a high percentage of phone calls were not answered. Because of vacation season, most of the business that were targeted, which are rather small or medium sized, are having their holidays mainly during this period of time.

5.1.2 Results of discussions

Afterwards, when basic questions were gone through, there were several interesting discussions about the topic, which were not included in questionnaire.

The most interesting topic was buying behaviour, which came up with two interviewees. As a result of the discussions it was stated that for these two companies' price and quality are the most important factors when purchasing automotive components for their applications. Location of supplier did not matter as much, as long as the logistics costs are included in total cost of product.

Second point that was made during the minutes that were outside of structured questions, were that in most cases these companies use retailers as their suppliers when it comes to these specific components. Reason for this is small annual volumes.

5.2 Questionnaires by e-mail

Original idea was to interview all the possible companies over the phone, because of bigger percentage of possibility to receive the answers and to get quicker respond. Change in plans acquired when several targets from the list did not answer to calls or

were in the situation where giving the answers was rather complicated over the phone. As an alternative, thirty one questionnaires were sent out by e-mail.

Questionnaire were originally created in English and in some cases translated into Estonian. Language was agreed over the phone for questionnaires and most of respondent did not mind English as a language of questions. Dichotomous, with only two options to choose from, and multiple questions were given, which made answering easier and quicker for respondents. Despite of the difference in language, all of the questionnaires were identical. Not many general interest questions were asked in the beginning. Main interest was in next four areas:

- Name of the company
- Position in the company of the person, who is filling in the questionnaire
- Age of the company
- Company's main production focus area

Position in the company shows how knowledgeable this person is about this area and how reliable can be the results provided by him/her.

Rest of the questions is covering more specifically above mentioned automotive components and general information of industrial market situation (seen through the eyes of company). A copy of the questionnaire is added as an Appendix 1.

5.2.1 Questionnaire results

Forty five of questionnaires were sent out. As a result of this, seventeen replies were sent back by e-mail and twenty eight companies did not answer by phone or by e-mail.

Not all of the companies were covering each criterion that was raised in the market opportunities section. Out of twenty companies six of questionnaire respondents do not have production in Estonia and four of seventeen companies do not use automotive components in their applications in this point of time. Eleven companies met the criteria. Seven out of these eleven companies were operating in furniture industry and offered best opportunities for automotive components in terms of volumes. Furniture companies use automotive products in their electrical furniture, for example: electrical beds, desks, office furniture, and medical furniture. Volumes are rather small, but high compared to other manufacturing areas. Production of furniture is also simpler and

more sustainable because of this. Machinery and electrical equipment might need more specific spare parts that needs to be developed as a new product that is specially made for this certain company's application.

5.3 Overall results

Questionnaire and phone interview results are shown in Appendix 3, which is added to this thesis. Names of the companies are not mentioned in front of the results, because of statement mentioned in Pre-Interview and request of several respondents. Interviewees are marked as numbers.

As an overall result, five phone interviews were held and forty five questionnaires were sent by e-mail. Twenty two answers were received.

Based on the questionnaire and interviews data, we can say that there is active industrial market available for automotive components. In terms of size of volume, most of the companies are rather small and suitable customers for resellers than for direct suppliers. The most used automotive component, according to questionnaire respondents are sensors and switches, which is used mostly in furniture manufacturing purpose. Smallest demand according to this research is for industrial plugs.

Table 6 gives an overview of industrial market situation generally based of interview results. Most companies that were interviewed for this research see growth in Estonian industrial market. 60% of respondent think that market is growing, 10% see that it remains stable and 30% out of twenty two respondents did not answer the question. No one thought that demand is decreasing. 50% of interviewees find that accepting EURO as a currency, influences Estonian industrial market positively and gives more business opportunities for their companies. Rest of the respondents did not agree with this or did not answer the question at all. Reason for this might be that these certain companies that answered "yes" have managed to have more international contacts and business deals after entering the euro zone.

Table 6. Interview results (Phone and e-mail)

	Is production in Estonia	Do use automotive components?	Future for these products (5-10 years)	How do you see industrial market in future?	Did EURO give more opportunities?
1.	YES	NO	-	-	-
2.	NO	YES	Stable	Growing	NO
3.	YES	NO	-	Growing	YES
4.	NO	YES	Stable	Stable	YES
5.	NO	YES	-	Growing	YES
6.	YES	YES	Stable	Growing	YES
7.	YES	NO	-	Growing	YES
8.	NO	YES	-	-	-
9.	NO	-	-	-	-
10.	NO	-	-	-	-
11.	YES	YES	Changing	Growing	YES
12.	YES	YES	Growing	Growing	YES
13.	YES	YES	-	-	-
14.	YES	YES	-	-	-
15.	YES	YES	-	Growing	NO
16.	YES	YES	Stable	Growing	YES
17.	YES	YES	-	Stable	YES
18.	YES	YES	-	Growing	NO
19.	NO	-	-	Growing	YES
20.	YES	YES	-	Growing	YES
21.	YES	YES	-	-	YES
22.	NO	YES	-	-	YES

6 Conclusions

The conclusion section will wrap up all the information and the previous analyses. In addition, it the answers the research questions set in the beginning. This section reports the phase that covers the secondary and primary research results supported by the theoretical framework.

The theory of marketing research process and entering a new market gave base information of the investigation and further consideration. New market entry section led to need for more detailed information of how market is measured and how understanding buying behaviour and marketing mix can create better opportunities for the new enterer. This theory was used as base information when empirical research was done. Before starting research for the main body of the thesis, another paper, which was written previously in similar topic, was read and examined. The purpose for this was to see what could be the result for similar research in a small geographical area. This gave the opportunity to compare the similarities and differences of two studies and led to a discussion about why these appeared.

6.1 Answering the secondary questions

The first question set to be answered was: how economic situation affects Estonian industrial market and how has it changed over the years? The section four gives an overview of how industrial business is affected by general economic situation in Estonia. Relying on data collected from secondary sources the conclusion for this question would be that there is a rather tight connection between other economical sections. Figure 7 shows that industrial production was affected by economic crisis in 2008. Furthermore, the connection was found when similar estimations were applied for the future by Estonian Ministry of Finance and companies that are currently operating on the industrial market. Steady growth is expected for Estonian economy generally as well as for industrial market.

The second aim was to investigate how big the market generally is and in terms of volumes and buying preferences by the customers? Firstly it was important to understand into which market section this project can be suitable. According to the study done, the

industrial market is divided into the different sections. Manufacturing, which is one of the nine sectors, was identified as only the suitable target market. Manufacturing is also divided into several different areas.

By identifying possible industrial applications, using automotive components, four manufacturing groups were picked for the research: manufacture of electrical equipment, manufacture of furniture, manufacture of motor vehicles, manufacture of machinery and equipment. Manufacture of motor vehicles and trailers was found to be the biggest group out of these four, but also the most decreasing area. Despite the size of the market, not many suitable companies for this research were found for interviews in this section. Furniture manufacture was the smallest group out of these four, but probably still offers the biggest opportunities for automotive business in Estonian non-automotive industrial market. Most companies, which covered needed requirements, were targeted for interview in furniture manufacture area. Other two groups were increasing in terms of volumes compared to year 2011 and also located in top list of all areas, but as similar to manufacture of vehicles and trailers, small amount of companies were picked for the interview.

Based on interview results, biggest volumes were identified for furniture manufacture. In terms of value of these amounts the market is rather small or medium for direct suppliers. Questions about buying preferences were not listed in the questionnaire, but were discussed separately afterwards with two respondents during the phone interview. As a result of discussions, both companies found that price plays very important role for such a small market. Quality was not less important. Advertising themselves by offering quality products at a reasonable price is important for companies aiming to move from small to medium business. To be able to be competitive, they need the similar support from their suppliers regarding spare parts.

Secondary and primary results indicate that Estonian non-automotive industrial market is rather small in terms of operating areas and needs for volumes for automotive components. Companies that are operating in this area are small or medium sized and the need for automotive components, in terms of annual volumes, is low.

After answering two first questions, it is giving the base information for finding answer to last base question: are there future opportunities available for direct suppliers? Often high volumes are expected from customer by the direct suppliers in case of signing the

contract with them. According to research the result it was seen that Estonian market in terms of volumes is small, but increasing. This gives small opportunities for entering the market now, but it can change a lot during the years if the estimations regarding economic growth are reliable for the future.

There are more opportunities available for retailers and smaller suppliers that can benefit from signing the supply contract based on low annual volumes. The reason why bigger suppliers are not interested in this case is mainly time capacity used when working with smaller customers. The final result from this business is that it is often not profitable enough for large companies.

Results of investigation and answers for questions that were asked, identified some opportunities that are available for large automotive component suppliers in Estonian non-automotive industrial market. Next section will use the information available and give an overview of recommendations that were done. There is not only one option available when entering this market, but a possibility to pick or use even several approaches.

6.2 Recommendations

Several factors were taken into account and three recommendations were made as a result of this research. Recommendations are based on the assumption that supplier will make an effort to enter the market.

Recommendation 1: One possibility to enter new small market is to find a partner, which can be either a retailer or smaller company operating in the same field. This option will create an opportunity to work with only one company that includes all these smaller companies, which are available for this business. That solution reduces issues with time capacity and gives safe opportunity to monitor market for the future activities.

Recommendation 2: The second recommendation is to investigate furniture market more closely and find out if the products available for this area are suitable as originals or need to be modified. If market seems to be increasing enough then this could be entered already in the beginning even if that may use some extra time capacity. This

can create a solid base for future activities. That option is possible only in case when other business areas within the division cover the loss during the time of entry.

Recommendation 3: As results for Estonian market research are similar to research done for Iberian market, the same approach can be used. Entering the market as a technical solution provider, this gives an opportunity to offer them customized products. This approach may help the applications to adapt also spare parts that are provided by the supplier and could lead to a higher demand in terms of volumes for the future. This is case where supplier itself crates a market for themselves and at the same time makes it more difficult to other suppliers to enter.

6.3 Answering the main question

This paper concentrates on finding out what are the opportunities and market solutions available for automotive components that can be used in non-automotive applications.

Based on the result we can say that at current time there is a small or medium market available for automotive components. Despite the small market several recommendations were made for supplier. According to information available about Estonian economy and manufacturing area it can be stated that some increase is expected regarding opportunities for the future and this creates more solutions for entering this specific market.

Both options are available: to offer already existing components or to develop new products to create new market opportunities. Still it is necessary to keep in mind that current market is more profitable for smaller suppliers or retailers because of the low volumes demand.

6.4 Further studies

The aim of the study to search for wider area and to find out what might be the opportunities. Deeper investigation should be done to understand different manufacturing groups better. As already mentioned above in the recommendations section, based on the information gathered during primary research done for this paper, furniture market is worth to be researched closer. By narrowing down the research area and product

selection will create more advantages when entering the area that seems to be offering the most opportunities for automotive components in Estonian industrial manufacture market. A similar approach, which was used for this paper, could be applied for further more investigations.

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Interview Questions

Name of company _____
 Year of establishing _____
 Contact person (name and position) _____
 Company's main production/focus area _____

1. Do you have manufacturing in Estonia

Yes ___ No ___

1.1. Do you use automotive components in your production (electrical motors (12 V and 24 V), sensors, relays, switches, industrial plugs...)?

Yes ___ No ___

2. If YES, then circle next components, that your production is using

<input type="checkbox"/> Electrical motors	<input type="checkbox"/> Switches
<input type="checkbox"/> Sensors	<input type="checkbox"/> Industrial spark plugs
<input type="checkbox"/> Relays	<input type="checkbox"/> Other, what? _____

3. **MOTORS** (DC- motors 12 and 24 V)

Yes

3.1. Where do you use it? _____

3.2. What are the volumes per year? _____

No

3.3. Do you see a need of it in the future? __YES __NO

3.4. When? (within how many years) _____

4. **SENSORS**

Yes

4.1. Do you have a need in measuring

<input type="checkbox"/> Levelling / tilting	<input type="checkbox"/> Vibrations
<input type="checkbox"/> Acceleration / retardation	<input type="checkbox"/> Temperature
<input type="checkbox"/> Gyro measurement	<input type="checkbox"/> Oil quality / level
<input type="checkbox"/> Angel measurement	<input type="checkbox"/> Airflow
<input type="checkbox"/> Distance / direction	<input type="checkbox"/> Air quality
<input type="checkbox"/> Pressure	<input type="checkbox"/> Gases /smoke gases
	<input type="checkbox"/> Other application

4.2. What is your use? _____

4.3. What are the volumes per year? _____

No

4.4. Do you see a need of it in the future? __YES __NO

4.5. When? (within how many years) _____

5. RELAYS**Yes**

5.1. Where do you use it? _____

5.2. What are the volumes per year? _____

No

5.3. Do you see a need of it in the future? __YES __NO

5.4. When? (within how many years) _____

6. SWITCHES**Yes**

6.1. Where do you use it? _____

6.2. What are the volumes per year? _____

No

6.3. Do you see a need of it in the future? __YES __NO

6.4. When? (within how many years) _____

7. INDUSTRIAL SPARK PLUGS**Yes**

7.1. Where do you use it? _____

7.2. What are the volumes per year? _____

7.3. APPENDIX A (3/3)

No

7.4. Do you see a need of it in the future? __YES __NO

7.5. When? (within how many years) _____

8. OTHER**Yes**

8.1. Which component(s)? _____

8.2. Where do you use it? _____

8.3. What are the volumes per year? _____

No

8.4. Do you see a need of it in the future? __YES __NO

8.5. Which component(s)? _____

8.6. When? (within how many years) _____

9. How do you judge the future for need of these products in 5 to 10 years? (add comments if needed)

___ Growing market _____

___ Steady market _____

___ Decreasing market _____

___ Other comments _____

10. How do you see industrial market generally in future in Estonia? (add comments if needed)

Growing market _____

Steady market _____

Decreasing market _____

Other comments _____

11. How have industrial market changed within last 5 years? (looking through the eyes of your company)

12. Do you see that accepting EURO (€) has opened more opportunities for Estonian industrial market? YES NO

13. If YES, then how? _____

Pre-Interview Statement

Preliminary:

Interviewees have given a promise that interview results will be treated confidentially. No direct references will be made in this published paper between interview results and company's name. Giving information to third party will be agreed between company and interviewer.

Background:

I am a student in Helsinki University of Applied Sciences and study International Business and Logistics. At the moment I am writing my Bachelor thesis on Estonian non-automotive industrial market that is suitable for automotive components. This thesis is written in cooperation with Robert Bosch Oy.

Interview Objectives:

This interview objective is to understand how big is Estonian industrial market and which manufacture area is most targetable for automotive components. Second aim is to see which applications can use automotive components and besides that to find out more about buying behaviour. Main target is to see the opportunities available in Estonian non-automotive industrial market for automotive products.

Interview Format (Phone)

I have a questionnaire that is used as a base of interview. All answers will be marked down to the printed paper manually.

Interview Format (E-mail)

Questionnaires are sent out by e-mail and expected to be received also via e-mail.

Interview Results (phone and e-mail)

	Is production in Estonia	Do use automotive components?	Electrical motors	Used in what application	Volume per year	Need for future / when?	Sensors	Measuring what?	Used in what application	Volume per year	Need for future / when?	Relays	Used in what application	Volume per year	Need for future / when?	Switches what application	Used in what application	Volume per year	Need for future / when?	Industrial Spark Plugs	Used in what application	Volume per year	Need for future / when?	Other components used?	Future for these products (5-10 years) future?	How do you see industrial market in future?	
1.	Machinery	YES	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.	Electrical	NO	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.	Machinery	YES	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.	Motor vehicles	NO	YES	-	-	YES	YES	-	-	-	-	YES	Cars	Medium	YES	Cars	Medium	YES	-	-	-	-	-	Several	Stable	Stable	YES and NO
5.	Motor vehicles	NO	YES	-	-	-	YES	-	Automotive use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Growing
6.	Motor vehicles	YES	YES	-	-	-	YES	Several measurements	Cars	Depends on demand	YES	YES	Cars	Depends on demand	YES	Cars	Depends on demand	YES	-	-	-	-	Several	Stable	Growing	Yes	
7.	Machinery	YES	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Growing
8.	Electrical	NO	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Growing
9.	Electrical	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.	Furniture	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.	Machinery	YES	YES	-	-	-	YES	Several	Several	Low	YES	YES	Several	Low	YES	Several	low	YES	-	-	-	-	-	-	-	-	Changing
12.	Machinery	YES	YES	NO	-	NO	YES	Several	Several	Low	YES	YES	Several	low	YES	Several	low	YES	-	-	-	-	-	-	-	-	Growing
13.	Furniture	YES	YES	NO	-	NO	YES	-	-	ca 50-100	YES	NO	-	-	-	-	-	NO	-	-	-	-	-	-	-	-	-
14.	Furniture	YES	YES	YES	Small / Medium	YES	NO	-	-	-	NO	NO	Office furniture	-	-	-	NO	-	-	-	-	-	-	-	-	-	-
15.	Machinery	YES	YES	NO	-	NO	YES	Distance, pressure, temperatur, oil devices quality	In different devices	ca 100 pcs	YES	YES	In different devices	ca 10 000	YES	In different devices	ca 1000	YES	-	-	NO	-	-	-	-	-	Growing
16.	Furniture	YES	YES	YES	ca 100	YES	YES	Pressure	Beds	-	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Stable
17.	Furniture	YES	YES	NO	-	NO	YES	Distance, pressure,	Several applications	Low	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.	Furniture	YES	YES	NO	-	NO	NO	-	-	-	NO	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.	Electrical	NO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.	Furniture	YES	YES	YES	> 50	YES	NO	-	-	-	NO	NO	Beds	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.	Furniture	YES	YES	YES	Low	YES	-	-	-	-	NO	NO	Electrical furniture	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.	Furniture	NO	YES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

“-“ marking stands for not answered question.

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