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Description and implementation of selected foresight methods on the example of the CZ
Eika s.r.o. company

Diploma thesis

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Abstract

This paper is focused on introduction of concept Foresight and its approaches. Work states how the concept is expanded and used. In the theoretical part selected foresight methods are outlined and described. In the practical part work shows implementation of selected foresight methods on example of the certain company. Further recommendation for the company is also suggested. During working on this thesis, I used methods of literature search, individual research of the company and its internal documentation, then I used method of interviews, brainstorming and critical thinking.

Key words

The foresight, corporate foresight, foresight methods, foresight framework, framing, scanning, forecasting, visioning, planning, acting, implementation.

Abstrakt

Tato práce je zaměřena na představení konceptu Prognostiky a jeho přístupů. Práce uvádí, jak je koncept rozšířen a používán. V teoretické části jsou nastíněny a popsány vybrané prognostické metody. V praktické části práce ukazuje samotnou implementaci vybraných prognostických metod na příkladu vybrané společnosti. Dále navrhuje doporučení pro společnost. Při zpracování této práce jsem použila metody rešerší, individuálního výzkumu společnosti a jejich interní dokumentaci, dále jsem použila metodu rozhovorů, brainstormingu a kritického myšlení.

Klíčová slova

Prognostika, firemní prognostika, prognostické metody, prognostický rámec, rámec, skenování, předpovídání, vize, plánování, jednání, implementace.

Declaration

I declare that this diploma thesis has been elaborated separately. I declare that I have listed all the literature and resources which I used.

In Olomouc 10th of April 2019　　　　　　　………………………………………

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Acknowledgement

I would like to express my sincere thanks to supervisor of my diploma thesis Mr. Pavel Nováček, for his advices and patience. I would like also to company CZ Eika, s.r.o. for the material and knowledge which provided me. Finally, I thank all the people who supported me and helped me.

Content

1 Introduction

Today's world is often characterized as quickly changing. We can see changes everywhere, what was good yesterday may become old and unwanted tomorrow. Since future is not certain people are trying to prepare for it. That is reason why were science field future studies or futurology emerged. Eventhat concept may sound new we know a lot of examples from the past where people were thinking and imagining future world. For example, Thomas Moore with his work Utopia published in year 1516 tried to describe future state of society.(Editors, 2014) From future studies emerged new methodology in second half of 20th. Century and it is Foresight. Foresight is method focused on gathering information about the future analyzing and creating visions and scenarios. Foresight scope or use is very wide we can foresight everything what has a future. Foresight project must be set out on several levels. So, after topic selection we have to think on environments that influences our topic. How far to the future we want to look, how many years we will cover in research, which geographical horizon we want to research and so one. What I consider as interesting is two approaches to examine the future and it is normative and explorative approach. In explorative approach our starting point is present, where we focus on signals which tell us how future can evolve. On the other hand, by normative approach we start our research from the future, we create our preferable future and then create way how to achieve it. Yes, as I indicate, there is more than one future. Foresight divide futures into probable, plausible, possible and preferable future according level of their probability or wanting. So, as you can see foresight has its own processes and rules. But it is not science with such a rich history as for example biology. That means more united terminology must be worked out. A great help here can provided by universities.All over the world we can find universities with future or foresight field. Universities with their own researchers and development provide or describe a great deal of methods. During my work I decided to use framework method developed by the United states University of Huston by Peter C. Bishop and Andy Hines. Hustonframework is composed of six steps. These are framing, scanning, forecasting, visioning, planning and acting. Framing phase is focused on creation of objectives and clarifying the framework. During framing we must gather necessary information so in practice we focus our primary research to find general information and data. Scanning is about finding more wider view for better understanding company background and then identification of trends, hits and signals. In forecasting step, we should describe how the future may or should look like so creation of baseline and alternative futures will be result of this phase. Since the first three mentioned phases are more about mapping the future next three phases are about influencing future. Main aim during vision step is creation of a company vision and preferred

future. Compelling statement or imagine of the future that will catch the people. With vision in our hand we focus on planning, plan how to reach preferable future. Last phase of Houston University framework is acting, that mean implementation of our plan or strategies.(Bishop & Hines, 2012)I will focus on theoretical description of these steps in theoretical part of the paper. In the practical part I am going to implement these methods on example of the company CZ Eika, s.r.o.

I will focus on in my opinion most common type of foresight and it is corporate foresight. This basically means usage of foresight in company or corporate environment. Probably most famous example of corporate foresight is Royal Dutch Shell which is creating future scenarios for more than 40 years. (Shell, 2016)They use corporate foresight to find signals or drivers of change that will show how future can look like and results are than gathered and presented in several scenarios. This is first phase of corporate foresight in second phase companies should focus on influencing future and creation of their own preferable future and strategic plans. Building own vision and implementation actions to reach their goals.

Corporate foresight is not the only one approach. We can find a lot of examples of foresight in the world as technology foresight, government or even economy foresight. Well, situation is not the same among the world or countries. Some states implemented foresight in governmental strategies and provide centrally coordinated efforts. Some states use mixture of public and private cooperation during foresighting. However, "who uses foresight how and how often? How exactly is foresight distributed by countries and industry?" Unfortunately, there is not any statistics which may answer this question. One of the causes can be perception of foresight. Subjects are not often willing to share such information because they consider them as secrets. Here inCzech Republic we can see several efforts of foresight. But still this practice is not so familiar, which the process of globalization and sharing know - how will change. Maybe mentioning foresight advantages can help too. In my opinion, main advantages are preparedness for the future, flexible reactions, support during decision – making, higher competitiveness, fresh information and influencing future.

2 Objectives and methodology

The aim of this paper is introduction of the concept of the Foresight and perspective which is it based on. Outline its horizons, environments and types of changes and futures which foresight use. Then describe what is concept of corporate foresight and how does it look like. Delineate where we can find foresight and in which conditions. Zoom foresight perspective in the world and in the Czech Republic. Describe selected foresight methods. Introduce process of their implementation, followed by practical implementation of these methods on the example of the CZ Eika s.r.o. company. Than evaluation of outcomes should provide suggestion in final recommendation for the company.

In the first part of my diploma thesis I used method of literature search. I focused on resources which are relevant for my topic. During theoretical part I used sources as foresight text books, foresight methodologies, internetresources etc. I would like to highlight that I used a book Teaching of the future of Houston University as my guidebook, because it consents framework that I later implemented in practical part of my paper. As I already mentioned in practical part I researched company CZ Eika, s.r.o. That means studying of internal company materials, interviewing employees who are mainly working in company management. On the information which I gathered I applied my theoretical part procedures to implement foresight methods into a company. I was interested in what outcomes might foresight provide for the company. So, I evaluated results and offer final recommendations for a company. Based on relevance of outcomes I confirmed that foresight is very useful and brings new information and directions necessary for company survival.

3   Foresight

For many years people thoughts were past oriented. We were studying the history and looking in to the past and based on this experience we were able to avoid mistakes. Finally, during 20th century as the world become faster we changed our thinking and started look in to the future. We began to wonder how the future might look like, how can we influence it, how can we prepare for future challenges and so on. Foresight is part of Future studies or Futurology, science which studies future. World – first foresight programs appeared in Japan, France and United states of America in 1950s and 1960s. These programs were focusing on technology, economics and social needs. Then forecast began to spread to other countries as New Zealand or Turkey and gradually over the world.(Foresight.pl editors, 2013) Today we can find several universitieswhich offer program focused on future studies. The first university was North American´s University of Houston with Graduate program in 1975. So far, we can study foresight also in the Taiwan´s university of Tamkang or theExternado University in Colombia and even in theCzech Republic´s Palacký University.(Dawson, 2009)

So, what is foresight? We can describe foresight as "a systematic, participatory, future-intelligence- gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint action."(Miles, Saritas, & Solokov, 2016). Oras "a systematic way to examine alternative futures"(United nations, 2016). According Cambridge dictionary foresight is „ability to judge correctly what is going to happen in the future and plan your actions based on this knowledge"(Cambridge dictionary editors, 2019). Anyway, Foresight basically is thinking or looking to the future, accumulation of information and concepts, during which people trying to seek signals that tells us how future may look like, based on these signals we are doing short- or long-term predictions. Process which help us to find out the desirable future, build some visions and simply prepare for the future.

Essential idea that we must realize is that we are not able to predict the exact future. So, it means our prediction can be really good but there will never be 100% match between predicted future and real future. This is just fact we can rely on. We can also find it in "three laws of the future" created by Roy Amara, a former president of the Institute for the Future.

1. The future is not predetermined.
2. The future is not predictable.
3. Future outcomes can be influenced by our choices in the present.

Future is not predetermined in any book of fate. We can say there are many various alternative futures which are potential. We cannot predict future, unless we gather and

understand all the facts and information what happen and will have consequences or will simply shape the future. (Bishop & Hines, 2012)Every one of us can influence future by our own choices or acts. From perspective of the single individual I donot know when I will die, no one knows. Because future is not predetermined. Even if I am very obese, I can see that in future I will have healthy problems, but I cannot predict when or whether the problem will be heart or lung. However, it is just that I am thinking about it I can evaluate that I donot like shape of this future. So, I can influence it by losing weight and reach more desirable future. I must do the change.
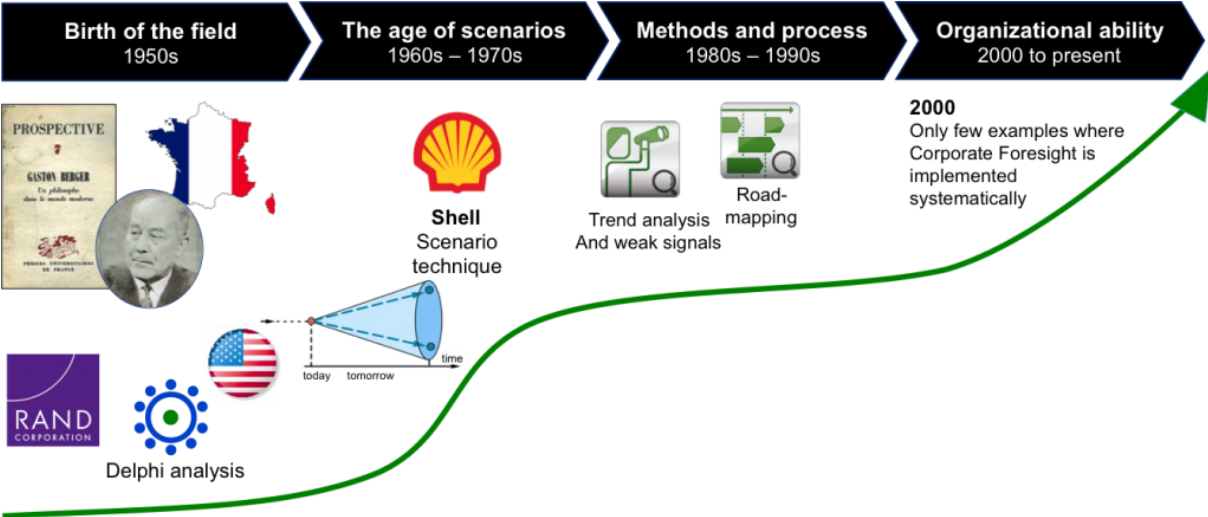
Picture 1. Picture 1. Foresight evolution; resource www.futureorientation.net

3.1 The four dimensions of change

Sources and levels

Changes that create a future are inbound and outbound. First type Inbound is change that happen to us as individuals, it comes from the world. Otherwise outbound is change which we create as individuals and influences the world. We have three levels of change according it´s environment. There is of course relationship between all three dimensions. Individual or organization can influence their immediate environment. Immediate environment can be changed by the global environment, and vice versa, which is more possible in case of company than in case of one individual. Though most people are trapped in their immediate environment.(Bishop & Hines, 2012)
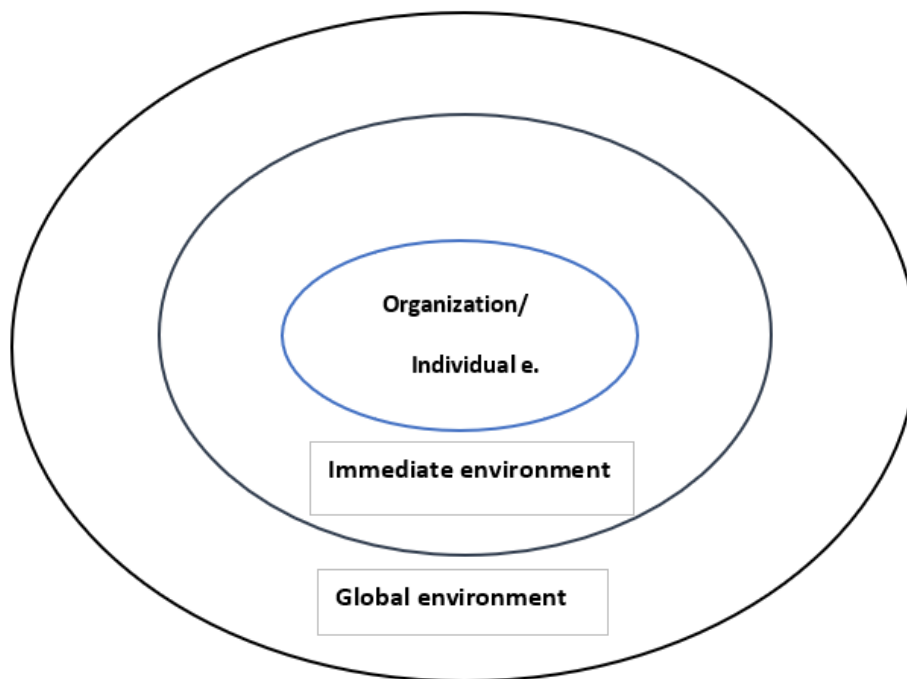
Picture 2. Foresight dimensions; own resource

Time horizons

Time horizon variable from short – term through medium - term to long – term. The time frame differs according what is the area which we are focusing on. For example, Short – term forecasts which are made up to one year are often used in field of politics. For example, we can do forecast on year elections. Than we can do longer foresight from 5 to 10 years in that case it is medium – term forecast. It is usually used by companies focused on immediate environment. And, medium term forecast can bring to mind it´s great – grandfather form communist era so called "five - year plan". Finally, long – term foresight is as the title suggests the longest with time frame from 25 to 50 years or even longer. This type is mainly spread among futurologists. They are using a long term foresights for example when they are traying to predict state and development of climate, because changes will be seen mainly in a long time horizon.(Bishop & Hines, 2012)

Rates of change

Based on history experiences we are sure that future will be full of changes. I suppose that from the first lessons of history people tend to see past as a line of continuous changes. As people began to settle down due to the development of agriculture then started to build ships so they can trade and then they had enough time, so they invented steam engine. Then one guy Edison plugged a light bulb into electricity. And in few years, we will fly in our cars as Bruce Willis in the Fifth element. Truth is, that most of the changes have basics in discontinuities involves. Generally unpredictable changes, that left just a little time for people to adapt and had a great influence. For people in 18th century would invention of Penicillin by Alexander Fleming sound like what we call today wild cards. Surprising and discontinuous event with low probability but very high impact.(Iknow editors, 2019)

Forms of change

As I already mention we have two types of change, continuous and discontinuous. We can express four types of continuous change by curves. First one is a linear, simply what we give we get. A second one, exponential change which goes up till it´s interrupted. Asymptotic also called as logarithmic, which approaches a limit. And the last one is cyclic, where change is moving between minimum and maximum. When we speak about discontinuous change, we use S- curve. It has three parts, old era, transition era and new era. Era or equilibrium is state before or after discontinuous change. For an individual can be one era shared living with partner which interrupts pregnancy as discontinuous change and by giving a birth person is approaching in the new era of life.(Bishop & Hines, 2012)
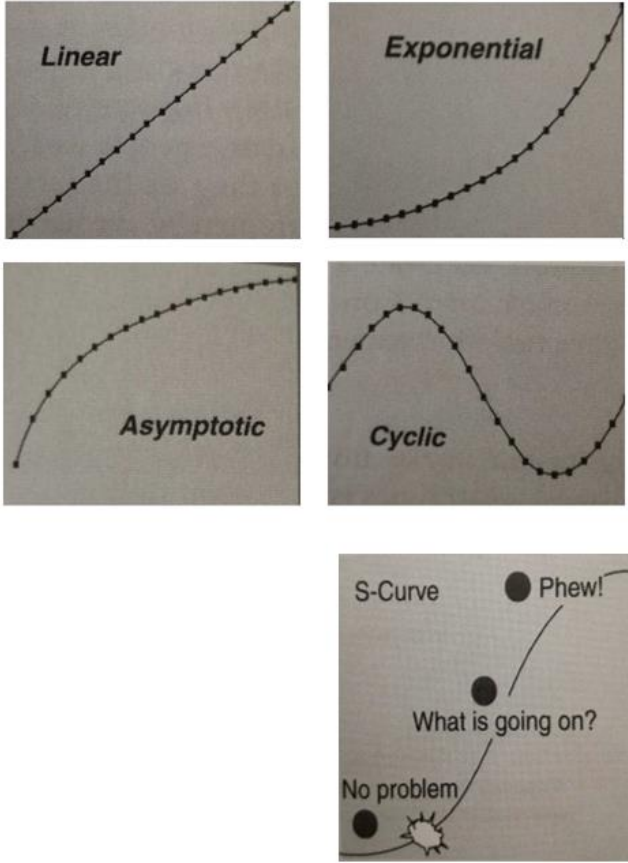
Picture 3. Forms of Change; Resource Teaching about the future

3.2   Types of future

When practicing foresight, we must think of all information, and signals that we know, how the situation looks today and so on. All this knowledge can show us how the future will shape. But obviously there is not only one future but always several alternatives. We can distinguish four types of future.

Probable future

Is future that we can derive from present trends. For better understanding we can use tool trend analysis. Take the present trend and linearly project it in to the future. So, it is future which should most likely occur. But of course, it doesnot mean that it will happen, for example new trends can enter the game, unexpected discontinuous changes that create totally different future. So, this type of alternative future can be understood as little bit flat.

Plausible future

Future which may happen. It covers wider field than probable future. We can go a little bit deeper and suggest several scenarios. Here we can count with changes even with unexpected ones. Here is more place for our own imagination. Results can be as I already mention several scenarios of plausible future.

Possible future

Possible futures are very broad. Mind must be very open to all events in this today´s world unrealistic ideas. We can also forget about physical laws and maybe imagine world in the light of sci – fi movies. It is hard to foresee how will world look in 50 years. Anyway, even wildest ideas might become a reality.

Preferable future

Everyone has preferable future, future that we want to happen to become true. We can build a vision of our dream future and then make ourselves a plan how to reach it. As for the athlete can be preferable future to win an Olympics, is for the Turkey preferable future to be in European union. We can see that not every person, or organization, donot have the same preferable future. Though everyone can build a bridge by planning to achieve their aim.(Voros, 2017)
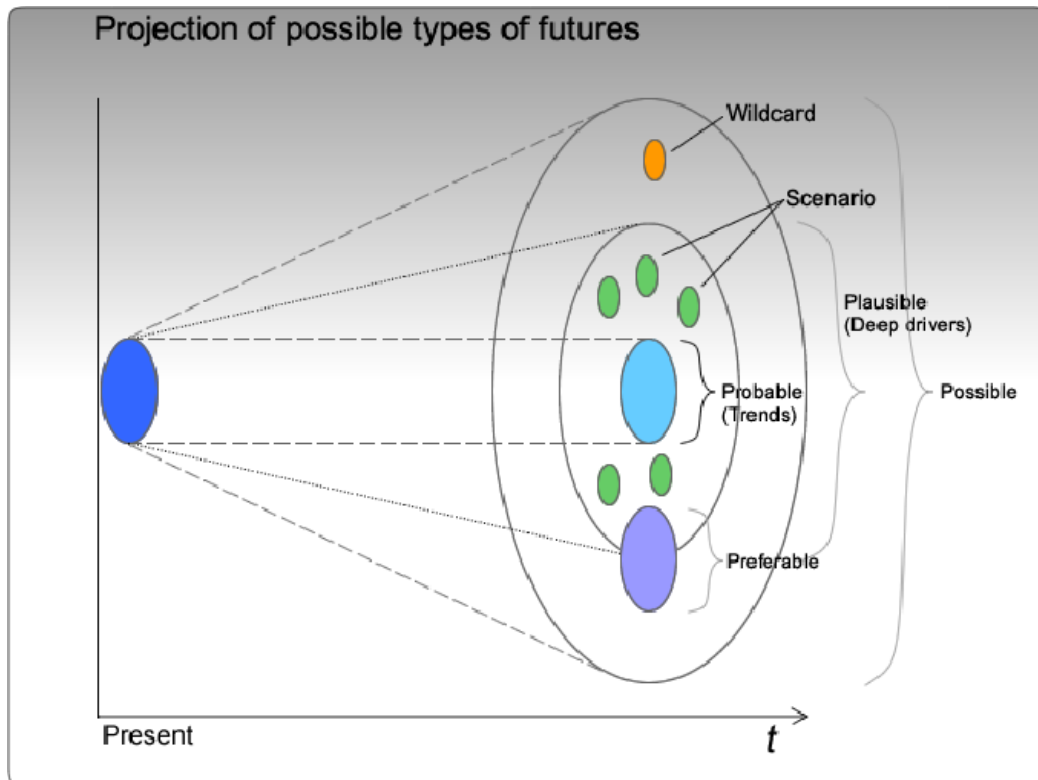
Picture 4. Types of the future; resource www.researchgate.net

3.3 Normative and explorative approach

During practicing foresight, we can use two approaches or two directions how to examine future. The start line in explorative approach is present situation, where we are trying to analyze or extrapolate trends, signals and developing options. We can use several tools during process as trend analysis, cross-impact analysis or Delphi method. In explorative direction we can frequently use question "what if? '". By answering thatquestion, we can create several possibilities or alternative futures.

On contrary Normative approach begins in the future by formulation of our desirable future,one desirable future or more futures that we are interesting in. Then we look backwards to the present and describe how we can achieve certain future. In this case we can use question "what should we do for something to happen?". Outcome may be Success scenario. Useful tool for normative approach is for example morphological analysis.

It is not forbidden to use only one method,in practice it is usually mix of both. (The European Commission's, 2005)

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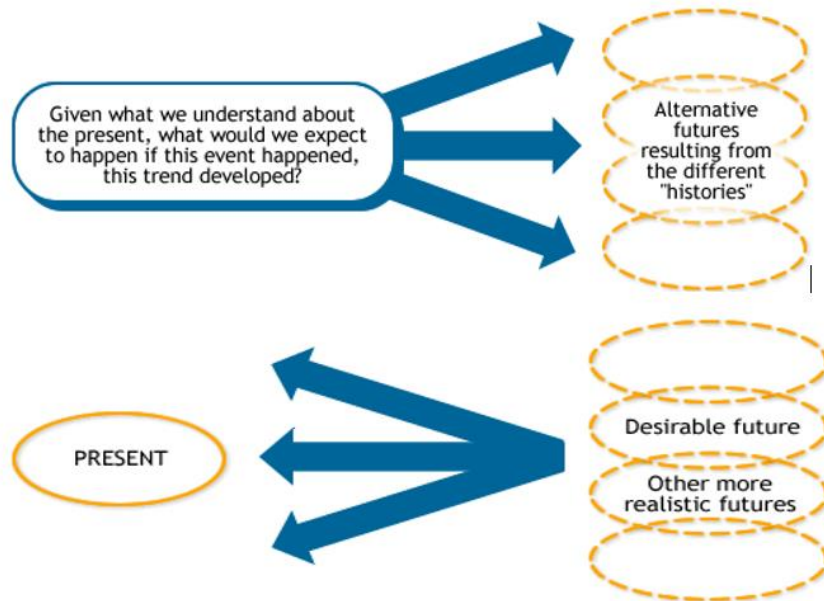
Picture 5. Normative and explorative approach; resource www.forlearn.jrc.ec.eouropa.eu

3.4 Prophecy

Here I would like to mention two types of prophecy on foresight field that I find very remarkable. Self-defeating prophecy and self-fulfilling prophecy, what does it mean? Self-defeating prophecy is basically forecast of future situation that will not happen because of formulation of this reality. So, the forecast will have succeeded just because it will not be fulfilled. That means that Self-defeating forecasters can be happy when they formulate future realities which will never happen. Because formulation itself makes people prevent this situation. Self-fulfilling prophecy is future reality that became true because someone formulized it. We can see Self-fulfilling prophecy in famous Greek tragedy Oedipus.Oracle prophesied Oedipus parents that when he grows up, he will kill his father and marry his mother. Terrified parents leave their son to protect themselves from prophecy. When Oedipus grows up, he returns, and as he does not know who his parents are, he kills his father and marry his mother. Maybe if they hadn't known that, it would have never happened. (literary terms, 2015)

3.5 Methods

Foresight has a lot of methods or techniques how to reach a certain objective. Depends on project or examined topic which ones are the best. Some of themethods were developed even before foresight and some of them came with foresight. Now I will mention at least few of them. Probably most famous is the brainstorming method, very creative and interactive method. Its aim is to bring or reveal interesting ideas, opinions, or solutions. Morphological analysis which helps with problem solving and allied with relevance trees can be a good start

for creating scenarios. Scenario method provides several cases with description how can situation look in the future. Or we can seek for wild cards and weak signals. Weak signals can show us probability of future trends, they can lead us to wild card too. As more expensive petroleum may mean bottom is close. In that case wild card is no more oil in the world. Another one is Delphi method, gradual questionnaire and comparison of experts. Questionnaire are anonymous, habitually have a several circles of survey with feedback. Or we can use simulations and game method, which is in today computer and hi- tech world easier than ever before. Of course, there is plentyof other methods like Environmental scanning, system analysis, futures wheels, risks analysis and so on. I am going to describe few of the methods that I used during my foresight later.(Nováček, 2011)

3.6 Framework

Here I would like to briefly introduce you the foresight framework developed by University of Houston. We can understand it as meta method because it combines several steps and methods and techniques. It aims mostly at strategic foresight projects. Framework is composed of six activities. First three activities which are framing, scanning and forecasting are focused on howthe future will probably look like. Second three activities are visioning, planning and acting. These three focuses on reaching the desirable or preferable future. I will talk about it later.(Bishop & Hines, Framework foresight: Exploring futures the Houston way, 2013)
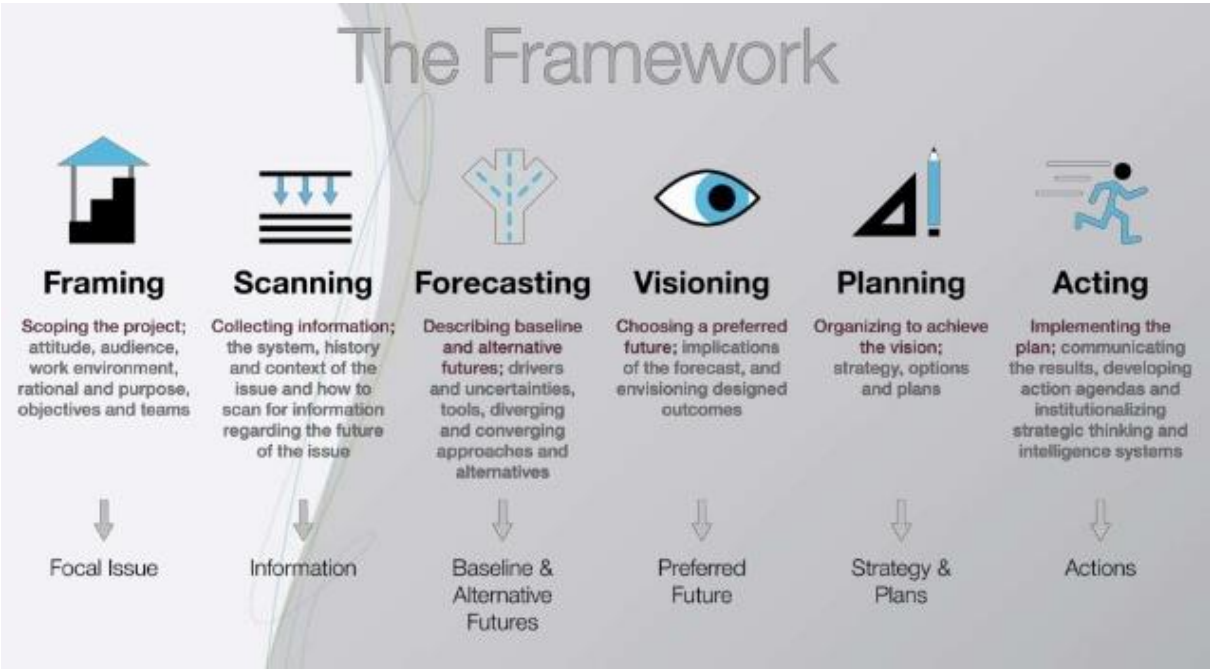
Picture 6. Houston University framework, resource andyhinesight.com

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So why foresight?

As I already mentioned we can do Foresight for ourselves as an individual human being and as a company or institution. We can do foresight on lot of fields, on field on economy, technology, government or on even on social field. This discipline is for everyone. However not everyone is thinking about the future. Why should we? Why foresight? It helps us plan our future, establish desirable future. Provides usa tool how to reach it. Allows us to be better prepared for the future. We can be able to respond to new challenges. It simply gives us a better chance to succeed. It develops our thinking and abilities. It facilitates our flexibility. It is just and only advantage. You know winter is coming and we must prepare for it! (European commision, 2005 - 2007)

4   Corporate Foresight

The world is not as it used to be, today´s world is changing fast, and businesses are facing very turbulent economic conditions. Market and its demands may change every day. There is no certainty that what is a top sailing product today will be it also tomorrow. Whole environment as we know can quickly change in a while. And if the company wants to survive, hold itself on the market, prosper, or even develop it must look to the future and prepare itself. Prepare for the future interconnected and discontinuous change.

In the past when markets were more local and smaller people could rely on their experiences, however, when markets become wider and more connected people felt the need to prepare themselves for the future. From that time, we can see efforts in tool strategic planning. Anyway, in today global world we need something more. And then come the foresight.

Corporate foresight is set of practices tools and activities that help organizations to prepare for the future, or to manage preferable future. It helps to assure company long term survival and success. We can understand this type of foresight as a methodological framework, as an exemplary and flexible planning and analytical tool. It is not to the point exactly universal for every company or organization. Depend on size or a type of certain company. Every company must judge and decide which way will be suitable for it. Anyway, I will try to outline the picture of corporate foresight, what need to be done and how you can implement this strategy in to business.(Sacio-Szymańskaa, Kononiukb, Anna, & Tommei, 2014)

When company decides to use foresight, it can choose between external foresight organizations or establishing new department within the company. It is crucial to have competent team of foresight experts. Team studies and gather information about company itself, about industry, about topics that are important or related to the company. Mean at micro as well as macro levels, internal and external company environment. Team uses

methods like stakeholder analysis or causal layer analysis. For external macro environment is usual STEEP analysis. Analyze data about company´s past and present. Search for signals that can or will mean change. After gathering data team create baseline and alternative futures. Team practice for example trend analysis, risks and opportunities management. All efforts mention above usually result in scenarios. According that company must create a vision that will try to achieve. The new preferred future. Next step is plan how to reach it, choose strategies, select approaches, identify values, set measures and indicators and so on. Than is time for action, specify responsibilities, authorize persons and distribute tasks.

How does it look like in practice? We can look at Royal Dutch Shell, which is Dutch – British oil and gas company. Shell is a big and famous company. Is has around 86 000 employees in over 70 countries in the world. Shell income was $23.9 billion in 2018. (Shell, 2019)

Shell is a huge and still developing company, maybe one of the reasons of Shell success is forecasting practice. They have been using scenario method since 1970s. Shell has been working on scenarios to help them identify and prepare for nascent global challenges. Shell is arguing that scenarios helped them to predict and adapt to significant events as the oil shock in 1970s or the collapse of communist Europe in 1989 and the financial crash in 2008.

During creating of scenario Shell cooperate with experts of certain topics. Now Shell has scenarios up to year 2050. They presented Scramble and Blueprints scenarios. Scramble scenario means that people will push to reach energy security. So, countries government will be employed with negotiations for energy recourses rather than care about the nature. Politicians will use always the easiest way how to reach enough of energy. Focus on climate and climatic changes will appeal only when natural disasters occur. In Blueprints scenario people will also seek for enough energy resources but with emphasis on environment. With pressure of society,economy will go hand in hand with healthy environment which will be encouraged with new technology and innovations.

What does it mean for Shell? Well I guess now they are preparing for both possibilities. With scramble scenario, which is of course more suitable for the oil company they have time, time to continue business with today´s nonrenewable sources and by time maybe increase prices during oil shortages. On the other hand, considering Blueprint scenario Shell should now look for possibilities how to skip on renewable resources. Anyway, Shell is preparing for the future.(Rainbow, Davis, Bressand, & Bentham, 2011)

5   Foresight in the world

If we search foresight in the world, we can see it on dozens of examples in a lot of directions. We can see it in private as well as in public level. In public level it is about governments. In past governments were focused more in science and technology, now we can see foresight efforts in also in society and economy. Governments make or outsource foresight in many sectors. For example, how will global trade market look like, what will be the innovations and development in health care or future of agriculture. Situation is not the same everywhere, there are countries which use foresight occasionally and we can find nice examples of state where foresight was implemented in everyday politics, there is several ways how countries approach foresight. For example, France and Netherlands foresight activities are centrally coordinated and founded by the government. Or in states like Finland or Germany foresight works on public private cooperation between lot of units like ministries, universities, research centers and so on. There are also states that work with both types. And states which donot really focus on the future strategic decision making. I think a nice example of foresight use can be find in Finland, which every four years writes The Government foresight report. It is important document that proceed development aspects of large scale of topics, it formulates governments visions and wanted directions. The ministers establish teams of experts to work on it. They focus on long term foresight between 20 and 30 years. The government and the Parliament then with document in hand work together to reach desirable future. Example of centrally coordinated foresight is the Singapore, which established the Strategic future network. Which unify all public foresight units there. Why? Because Singapore has a large scale of foresight units and that all began in 1991 when scenario planning office in the ministry of defense was established. Since then Singapore has set up foresight department as Horizon scanning program and so on.(Kuosa, 2011)

On Private level we often encounter with the term Corporate Foresight or strategic foresight. Basically, both terms mean the same, studying, planning and preparing for the future in business environment. Which provides significant help with decision – making. It is difficult to find out how exactly is corporate foresight spread in the world. There are no exact statistics how many corporates do foresightand on which level or what is the most popular method. That is because companies consider it as a private information. We can find several research studies dealing with corporate foresight in companies on pattern of respondents. Anyway, we can notice increase of websites and platforms which offer help with implementation of corporate foresight or another which try to map use of CP. We can therefore conclude that there is a demand for Foresight, and it is expanding in to the world more and more. (Daheim & Uerz, 2006)For example, European foresight platform, supported by the European commission which aim is to bring together experts and communities to share foresight knowledge and they also provide foresight trainings and even foresight film festival and so on.(foresight-platform, 2017)

Corporate foresight is held on decent amount of directions as innovation, technology development, strategy, risk or engineering project. And it is practiced in various industries as automobile, commerce, financial services, pharmaceuticals and other. We can find foresight mainly in bigger companies like internationals companies and corporations, it is not true that medium size, small size or even micro – size companies donot use foresight. Of course, large – size companies have more resources to afford investments in foresight. Maybe the world most famous companies practicing foresight are Philips, Siemens, Volkswagen, BASF and others. The corporate foresight in the world differs with terms, methodology and tools but the aim is same. Reach information about the future to improve decision making and direction of company. (Luebkeman & Hargrave, 2017)

In 2007 European Foresight Monitoring Network founded by the European Commission released report Global foresight report. Report is based on 864 cases from the whole World. They analyzed data by regional groups and most commonly used methods during foresight.

- EU 27 - Literature Review
- Trans Europe - Literature Review
- North America - Expert Panels
- Latin America - Expert Panels
- Asia - Expert Panels
- Africa - Scenarios
- Oceania - Back casting

They found out that most commonly used methods are literature review, scenarios and expert panels, method aimed to gather expert's opinions about certain topic. Another very commonly used method is brainstorming and future workshops. Method, which highlights teamwork where participative group create the desirable future and then find ways how to achieve it. Another very commonly used method is also brainstorming. On the other hand, most rarely used methods are for example cross – impact analysis and morphological analysis. They also found out that most foresight exercises are medium and long – term, between 10 to 20 years.

They were also focusing on industries related to foresight exercises. The top 5 industries were Manufacturing, Health and social work, electricity, gas and water supplyand communication. But this information can be misleading according not sufficient number ofparticipants.(Popper & Keenan, 2007)

6 Foresight in Czech Republic

The Czech Republic was a little bit skeptic about planning to the future. The communist era with 5 years centrally coordinated plans discouraged people. Concept of Foresight appeared the in 90s and since then was rarely used. However, we can see efforts in creation of institution and legislative framework which would prepare public and private sphere for future changes. These efforts we can see on example of VaVal. Information system of research, development and innovation which gather information about innovation and development. (odbor komunikace 01400, 2019)Another example is Industry 4.0 which main aim is to prepare Czech Republic for onset of fourth industrial revolution. Seek the impulses or signals and show possible directions of development and outline precautions.(Odbor 31300, 2016)Where to go for an advice in Czech Republic? To the Technology Centre of the Czech Academy of Sciences, it is non-profit association which provides research in science, technology and innovations. Is it an source of information on European research, development and innovation. And finally, it has been dealing with foresight for a long time.(Technologické centrum, 2003- 2019)Anyway, Corporate foresight is also not mapped well in the Czech Republic. According results of research by the University of Chemistry and Technology, Prague from 2012 – 2016, Foresight is not very widespread. Another thing is that companies use some of foresight methods by strategic planning but not aware of that. (Římanová & Valentová, 2019).

7 Framework

In next chapter I am going to describe six activities of the Houston University framework. I will gradually go through framing, scanning, forecasting, visioning, planning and acting. I will outline methods recommended for each step and several of them will be analyzed deeper. This part of work will serve as theoretical guide which subsequently show on practical example of the Company CZ Eika, s.r.o.

7.1 Framing

Framing is the first activity of the six foresight framework steps. Framing should help to frame, place and range the future project. Entitle objectives or clarify problem which we want to deal with. It aims to gather necessary information about problem. It answers questions like "What is problem environment?", "Who and what is involved?", "What are interrelations between them?" Framing uses methods as stakeholder analysis, issue analysis or casual layered analysis. During framing we set basic conditions of project. "How far we want to look in to the future?","What will be the area of our forecast?"We focus on today's trends in extrapolation industry and so on. Anyway, main output of this phase is project plan. Now I am going to go deeper to the procedure and show how to create a project plan.

At first, we must choose what we will forecast. We can forecast everything what has a future. That means we pick something from present not from a past. For example, The Dodo, or Raphus cucullatus has no future, because it doesn't exist anymore. We cannot forecast future of this bird. From present we can foresight almost everything. As a logistics manager we can do foresight on truck transport and its future, or as an automobile expert we can foresight future of electric car, or as a company we can foresight my future in the business. So, I must select a topic, or if I work for company, company can give me topic of foresight.

So, let's imagine we have a topic. Now what we need is information. All information and data about the topic that we can gather. So, it is time for research. We can divide our research in two types, and they are primary and secondary. Primary research is focused on first – hand information. In primary research we usually use methods of interviews, questionnaires and observations. "Who we can ask?" In corporate foresight we can ask employees of the company, or we can ask stakeholders, or even expert in certain problematic. Let´s say we google information in peoples head. Secondary research is more about computer or desk work. We try to find information in books, published articles, websites or even in newspapers.

Than is time to define our foresight domain. It means identify domain which is affected by our forecast. At first, we choose one of three following levels – Organization level, immediate level or global level. That depends on what we are foresighting. If we are interested in example of certain company communication, then we define level as organizational. If we foresight social changes in the world well, we will be interested in global environment. Than we must think about horizons. How far to the future we will foresight? Will be our foresight short – term, or do we want to cover more changes in the future so we will focus on long – term foresight? After making this decision we need to set out our final year for our project. Although time horizon is not only horizon we can establish, we can also define geographical horizon of our study. Again, it depends on our topic.

Another step is to be more specific. Summarize how current or today situation of our foresight objectivelooks like. Identify stakeholders and relationships between them. What are their values and interests? It will help us understand and predict their behavior. What is stakeholder analysis? It is analysis and identification of interested people or institutions in a certain problem or project. Analysis can provide us better understanding or picture of how project can be influenced and why. Even if our main aim is to look in to the future it is very important to see the past. We can track previous eras and changes that led to today's current era. We can find events that can be repeated or see a change in past which can inspire us and led us to see possible change in the future. During framing we can find new information or change our view or see problem form different perspective. So now we should go through our project plan and do changes if we want and summarize data and objectives.

In framing there is also time for specifying roles, methods and tools. That also depends whether you work on project alone or if you are part of the team. More beneficial can be work in the team because as the saying goes more heads more fabricates. But that does not mean one cannot do foresight. Anyway, here is place to think how you will work or communicate with our client and so on.(Bishop & Hines, Teaching about the future, 2012)

7.2   Scanning

Second action of foresight framework is Scanning. I would say this is not really nature task for people. And it is because people tend to be more focus on things that are more obvious. Why? Let's look at it. In this phase we are looking for signals. More specifically on weak signals. Signals, that are easy to ignore. Things, that are hidden under the surface. That whisper us that some change may come, showing us that new trend may come. These signals are not easy to find. No one tells you where you can find them. It is hard, and maybe because of it more people are looking for them in mainstream. It is easier for us when looking at the river see the water stream than little drops and organism in there. What is today obvious reality was once new and even before it produced signals that it will happen. As an example, we can consider situation with flying cars. I am sure, that everyone read or saw articles and movies with flying cars. In the future no wheels on the ground. It might look like the signal is saying that there will be flying cars. But in this case, we would only look at the surface. Signal is talking about development or evolution in technology of transport. It is not necessarilyembodied with flying cars. It is crucial to look under the surface of trend. Understand the signal and not misinterpret it. There are also signals, that may mean only small and not significance change, but it can be change, that have influence on our foresight. To understand their long – term potential will help us to prepare for the future. Of course, when we do long – term foresight we can predict signals implications broader. Also, while scanning phase we must not forget about wild cards, changes with low probability but high impact events. So, another step forward, with scanning you will not be surprised in the future.

Result of our scanning action should be more and wider information of our first action Framing, information like trends and drivers. Scanning results serves as a basic for analysis of the future in next step forecasting. By identifying opportunities and challenges and potential risks, helps with decision making and preferable future planning. Try to have opened mind and let's see the methods. While scanning we can use several methods like trend tracking, text mining, content analysis, or horizontal scanning. For purpose of my following research I will use environmental or horizon scanning. The meaning of environmental and horizon scanning is the same, so by my words it is realization or art of systematical exploring, collecting and analyzing of the external and internal environment. As I already mentioned we have three levels of areas or environments. These are organization environment,

immediate and global environment. So, we can divided our scanning action in to three areas which I will examine by three methods. (Webb, 2016)These are:

Environment	Analysis
Organization	SWOT
Immediate	Porter's five forces
Global	STEEP

Table 1Scanning analysis; own resource

SWOT analysis

It is an analytical technique often used in organization or company environment. It can be applied on whole organization or only on single department or project. SWOT stands for strengths, weaknesses, opportunities and threats. All mentioned you can apply for internal and external environment. It should help you to identify your opportunities, repair your weaknesses, use your strengths and eliminate threats. So, you are trying to answer questions like: "*what are we good at? What are our advantages? What can we do better than anyone else?*" And so on to discover our strengths. While thinking about our weaknesses we look for things, that limit us, or our competitors do better. While when we seek for opportunities we think about other markets for our goods or services or improving our distribution system. Last letter is T for Threats, were we must cover everything that means risk for our company.(Mind tools team, 2019)

Picture 7. SWOT analysis; resource www.wordstream.com

Porter's five forces

Is analysis created by Michael E. Porter from Institute for Strategy and Competitiveness of Harvard University. It is a good tool for analysis of immediate company environment. Five forces are New technology or substitute products, new competitors, suppliers, customers or consumers and rivalry among existing competitors. This tool helps you to map company's surrounding and brings also better orientation on the market. It is of course not easy to do for someone who is not an expert on certain topic or involved in certain company. So, during this phase is good to cooperate with company employees. They can provide us with deep insight in to problematic. (Gregory, 2018)
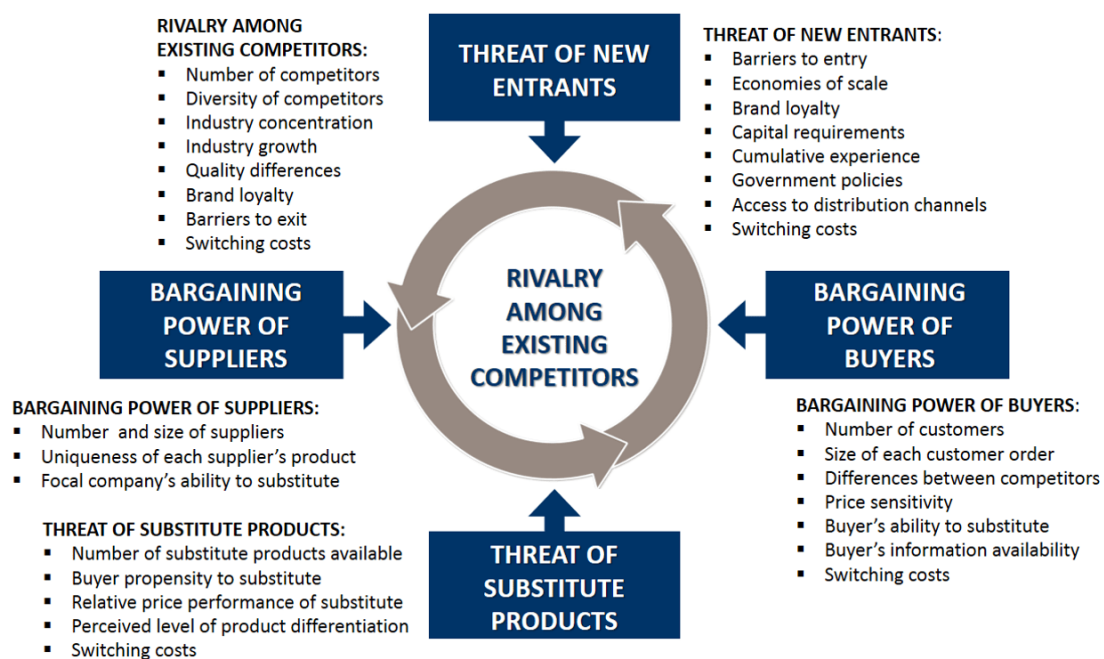

Picture 8. Porter's five forces; resource www.business-to-you.com

STEEP

Third, global environment is of course very broad, so we need use analysis that helps us gather all necessary data. Very familiar is STEEP analysis. STEEP analysis splits "world" in several categories. These are social category, technological, economic, ecological or environmental and political category. In every category we think about values, trends, signals and possible divers of change which can influence our company. So, we can think for example about following(PESTLEanalysis Contributor, 2015) -

- Social category - consumer behavior, lifestyle, demographics trends, values, etc.
- Technological category – innovations, energy, transport, communication, etc.
- Economic category – international trade, taxes, job availability, inflation etc.
- Environmental category – ecosystem factors, climate change, environmental regulations, etc.
- Political category – international conflicts, regulations, anti – trust, etc.
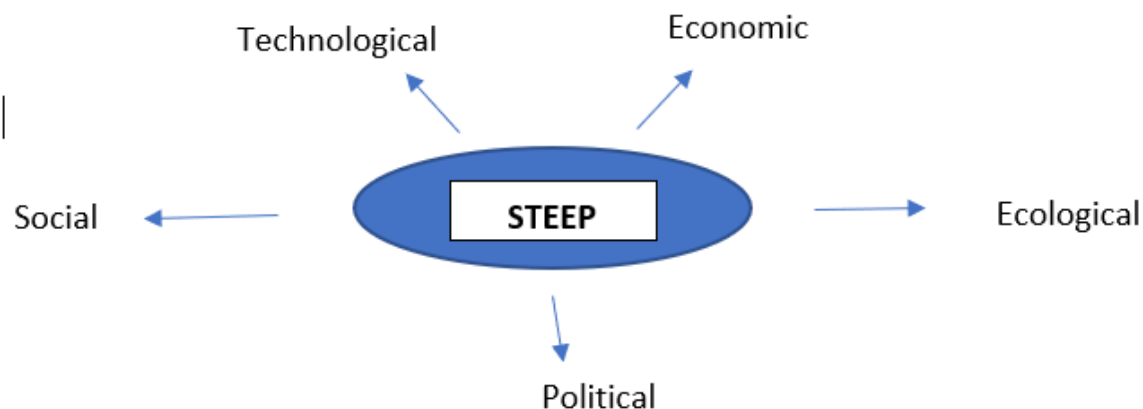
Picture 9. STEEP analysis; own resource

7.3 Forecasting

So how the future will look like? In third action of foresight framework we focus on mapping the future. Based on outcomes from previous scanning phase we try to identify divers of change and extrapolate them. So, we can have wider picture of the future. There is always more than one future. Although by extrapolation of present trends we can find "most likely to happens" future, and this future we call baseline future. Then there are other futures, that may or may not fulfill themselves and these are alternative futures. Our aim is to identify and describe all these futures. Very useful tool how to picture future is a scenario. We can imagine scenarios as the one that Hollywood use. Yes, describe future situation by storytelling and describing. Their advantagesare that they are easy to understand, they nicely describe the essence and are readable. There are several scenario techniques or

approaches like baseline Monoa, cross – impact analysis, Modeling, or Event sequences etc. And they are composed of a lot of other tools, analyses and techniques like role playing, divergence mapping and sensitivity analysis etc. That means we have a wide field of methods and approaches how to discover or reach scenarios. It is also important to know that methods are no straitjacket, no pile of rules that we must follow. Depend on our visions and needs within our aim or objectives of foresight we can use them to achieve our purpose. Creating of scenarios is not easy, it is quiet longer step during which we must focus on lots of aspects. So, it is often mix of methods that we need to use to create scenarios. (Bishop, Hines, & Collins, 2007)For purpose of my research which will follow in practical part of this work I decided to use Framework forecasting, method of Houston University, which I will adjust to requirements of my forecast. And I will go through.

At first, I will focus on creation baseline future. I will use my judgment; I will look for evidences and inferences and assumptions. Inference is something that we cannot or did not observe and still we know it is true, because we inference it. I will show it on example witha bus. We know that bus leaves from a bus station at 19 o ´clock. Even if we are not standing on the station, we infer that bus will be there. So, we didnot observeit, but we just know it. Evidences which I need I will find in gathered data. And I will build my assumptions on my judgment and hopefully critical thinking. During my baseline future work, I am going to identify factors that influence the future. There are trends, cycles, plans and projections. Trends are changes that will show the direction of the future in long term horizon. I will identify main changes and then use method of future wheel so I can project future implications of certain changes. When we look to the history or past, we can see that some actions are repeating, they occur in cycles. For example, like economy with recession and expansion. And it is very helpful for extrapolating of our future to see cycles that may occur. When thinking about the future I must keep on mind planes that for example governments want to apply. Maybe implementation of new rule or legislative can affect my business. Then I should also keep eye on public projections. Remember self-fulfilling prophecy? What if already something that have been said will change the future. After gathering all mentioned above, I will try to extrapolate or project it in to the future. And as a result, scenario of baseline future will be born.

As I already mentioned, baseline is not only future that may occur. It is often understood as future that will most probably happen, this reality is not often true. Because something may happen and change the direction of the future. And this something can be a lot of stuff. Here come alternative futures. It should cover various of surprises that may happen in the future. And that may then change the baseline future. So, what do we look for? Actually, we focus on key uncertainties. Key uncertainties are based on events, issues and ideas. What events may occur in the future? Events starts a new era, it can be expected for example economic recession or very unexpected like wild cards, for example cure for human mortality. They simply have power to change the future and establish a new era. Issues which we are solving today, and we know them from public agendas. Or issues that slowly emerge and are

not much publicly discussed, or issues that may appear in the future. Or even resolving of old issues. As an issue we can imagine conflicts, dilemmas or choices. Although even it does not appeal ideas can be strong drivers of change too. Very nice example is an idea of god that shaped through history whole humankind. Idea that even in 21s century moves the world. Idea of communism also control part of the world for several decades. Well, by strong evidences of history we know ideas may have great power to shape future. Finally, we should not forget about things that we consider as unchangeable, for example today's trend may change or ongoing plan may stop and not fulfill itself. Identification of all mentioned above will serve us as a starting point for creation of key uncertainties. But firstly, how to identify events, issues and others. In my work I will use method of Brainstorming. Which helps me to create range of field of possibilities and choices. Then it is time for identification of key uncertainties. In this phase we search for uncertainties that would have the highest impact for the future and that are most insecure. Results should be in form of list of the most important ones which together determine the alternative futures. Uncertainties are also connected with their impact. We are searching uncertainties with the greatest impact, so we can prepare for them, because that can influence us the most. After identifying key uncertainties and their impact we have necessary information to build alternative futures. So final step is scenario creating. Scenarios are stories about the future that give us a short description about the possible futures. They should be readable and understandable. Scenarios are main and last product of our forecasting. Scenarios then help with imagining how future may look like and also help to decision making. (Bishop & Hines, Thinking about the Future: Guidelines for Strategic Foresight, 2007)

Of course, everyone wants to reach not only some future but desirable future. While in these three previous parts – framing, scanning and forecasting we trying to map the future in next actions we will focus on influencing the future. First come first so another, fourth action of foresight framework by University of Houston and it is visioning.

7.4   Visioning

"I have a dream"

"I want to be a lawyer"

"Bring inspiration and innovation to every athlete* in the world. (*If you have a body, you are an athlete.)"

These are examples of visionsand also, the evidence that visions are not a new concept. Visions were here since beginning of humankind. First vision was said by American Baptist minister and activist Martin Luther King in previous century. I think it is easy to identify yourself with that claim. Everyone has visions, for example what would you like to do or to be or how to live in the future. All your answers would be a vision. Like mentioned above "I would like to be a lawyer". But not only individuals have visions. Third vision above is vision of an international company Nike. Countries also have a vision as communism implemented ideology in several states over the world has a vision of better future for own citizens based on public ownership. So, we can see visions all around us.(Bishop & Hines, Teaching about the future, 2012)

According GlennBezold vision is a compelling statement of the preferred future that an organization or community wants to create. But if we want to describe vision in one sentence is not enough. Vision is image of the future, it is positive, about something that we want or desire, it should be inspiring. It should motivate people; vision refer to a goal. Visions are often ambitious and appealing. (Institute for alternative futures, 2019)Vision itself is more in people's head, when you try to formulate it and put it on the paper or into your word document that it becomes a vision statement. Vision statements are typical for companies, it is kind of public manifestation of commitment to desire some preferable future. In corporate area we can also find term mission statement. Sometimes companies use this term interchangeably. Although mission statements are on the contrary focusing on today's situation, what company does and for whom.

Now let's look at vision creating. I will focus now on company creating vision because that is what I am going to do in practical part of this work. First of all, you have to go through data and information, I think it is better to clear and organize them at the beginning. At the beginning we can look at or create our mission statement. Clarify who are we, what do we do, what is backbone of our business, what are our objectives etc. Than we should use our stakeholder analysis from the previous framework action. In case we do not have it, we should create it. It helps us to understand who is involved and to identify their values. According previous information now we should determine our own values. (Kulakofsky, 2016)Now we can use three attributes for creating a vision. Answer three following questions –

- What are we passionate about?
- What can we do better than anyone else?
- What drives our economic engine?

Thus, we should see our preferable direction. Another step is to compare it with baseline and alternative futures. If we can identify ourselves with baseline or one of alternative future, then there is no need to create preferable future. And now is time to pronounce our vision or most likely desirable future. It can seem as an end of visioning action but to accomplish our foresight aim, we have to look at implications now. If our preferred future is not baseline neither alternative future than we must prepare for them too. Both types of future will have implications on our company. For not to be surprised is better to find these implications. For that purpose, we can use implication analysis or even future wheel analysis or creative imaginary. We will use implication analysis during another, fifth action planning. During visioning is important to cooperate with client, company should participate a lot during this action. Person making the foresight or a team of them should help client with creation of vision, and be their guides, not creating vision by their own. They should pick suitable methods for development of ideas and making visions like focus group, interviews and so on. Depend on the company if vision is created with authorities, directors or by group of wider management. (Bishop & Hines, Thinking about the Future: Guidelines for Strategic Foresight, 2007)Anyway, result of visioning is vision statement, sort of description of our preferable future or set of goals. Now I will outline visions attributes according Kelly Burke from University of Hawaii.

- Brevity - A vision should be brief, too long or too short statements are not effective. Too short statement may not be enough, on the other hand several pages statement is too excessive. We must keep in mind that vision must be understandable easy to remember. Average effective length is about 35 words or two to three sentences.
- Clarity –Vision should clarify goal and use intelligible terminology.
- Abstract and challenging – Statement must be challenging, so the challenge can motivate the people. Not too much concrete like plant 20 trees, but more abstract for example create better environment. The abstractness leaves space for human's imagination.
- States the Organization's Purpose– A good vision statement should characterize what exactly company or organization wants to reach. It is better when the goal can be somehow measurable.
- Future focused – Visions should consent of required end – state and note on – going actions that company plan to do for reaching the goal.(Burke, 2011)

I would like to add that visions are about to change. By visioning we formulate future state, and it is always different than today's state. So, we basically want to do something to change our present state. If organization or company want to change it requires help and effort of many people. People that we must convince that our vision is just perfect. Belief and

enthusiasm will move the mass. Change may not be firstly pleasant for people, anyway, changes requires good leadership and strong personality to convince people. So, let's together create a better future.

7.5   Planning

Since we have the vision. Now we must build a bridge from vision to action. Planning will serve this purpose. Plan should develop the strategy, set the goals indicators and measurements. During planning we must set the goals, not just unreachable wishes. But something that is possible to achieve. To fulfill our goals, we must find strategy that will lead us. Strategy needs direction, direction of change that will support whole company or organization during fulfilling. It is looking for a good way how to get from one place to another. Imagine that you want to go from the Bratislava to Prague, it is obvious you will not go there through Oslo. Of course, during our effort to reach the aim we must evaluate results. So, identifying indicators to measure is also crucial for success. If our goal is too long term, we can divide our plan in to several short – term sections to have clear schedule what do and when. During process of planning we can use methods as decision modeling or risks analysis, but probably most famous and commonly used method is strategic planning, which I will describe later. Hence result of planning action should be strategic plan or strategic scenarios. A sort of guidebook that should lead us to achieve preferred future, our vision. It is not necessary to end planning here, more convenient is prepare plans or maybe crisis plans about what we will do if alternative scenarios occur. Here we can use implication analysis and prepare plan for implications from alternative futures. (Bishop & Hines, Teaching about the future, 2012)Now let's look at the method of strategic planning and implication analysis.

At first, we must think, who can help us or participate on planning, who will we need and who will be the most suitable, who understand our topic. It can be for example engineers, or quality techniques when we try to develop a new product. For effective outcomes and cooperation, it is better to have team of 10 to 15 people. Then there is always someone who is leader of our team and makes final decisions, it can be for example director of company or authorities. Team than must create and agree on planning schedule. Following step is to gather and go through all data from previous actions. We will be interesting again in our vision and mission statements, values, SWOT, STEEP and other analysis that we did. Then team sets goals as series of milestones on the way to main goal, end – state of vision. With list of goals teams begins to work on strategy, or the method, tool or description how to reach each specific goal. In the other words team answers questions like "What we will do to reach the goal?" or "How we reach it?". Thus, goals must be ordered in time horizon. How long does it take us to reach it, implementation of new approach or development of new technologies are not one day matter, so we must consider real time, maybe 20 years is otherwise too unnecessarily long. When it is our strategy clear how we determine

fulfillment? Well indicators help. Every goal must relate to indicator that is possible to measure. With regular measuring of indicators, we can observe and evaluate state of strategy. It also gives us a chance to hit and make axles when we find out some problem or empower processes. When you have all information mentioned above it is time to put in on a paper. So, you can dispose of strategic and introduce it to whole company. (On strategy editors, 2019)

Picture 10. Planning process, resource www.onstrategyhq.com

Yet we have strategic plan, which should make us satisfied because that mean we know the way how to reach our preferable future. But what if something else happen. What if one of our alternative futures mentioned above come true? What we will do then? Well I think it is advantageous to prepare plan of actions just not to be surprise and be able to effective and flexible respond to alternative future. I suggest implication analysis. As a tool we use future wheel when we find implications of alternative futures. Depend on number of implications we can also order them or choose the important ones the more likely to happen and important for the company. And provocative ones, less likely to happen but with a great impact. Than we outline opportunities and issues that emerged for our company. And it also tags actions or responsibilities between company and action.

Result will be our action plans if alternative future happens. When we have strategic and action plan done, we are ready to implement them. To put them in to the practice. In other words, it is time for action.

7.6   Acting

Action is last phase of foresight framework. Yet we have in our hands what we want, and plan how to achieve our preferred future. In action phase is time to put in to the practice. We must focus our efforts to make our abstract plan more concrete. So, everyone knows what to do and when, how and to know duties and responsibilities. Result of action should be concrete action plan. Action plan has to be tailored specify on concrete company or organization. Methods that foresighted can use are for example coaching, learn and show the company how to do foresight right. (Bishop & Hines, Teaching about the future, 2012)Or they stand in role of consultant or they can help with transformational change by changing the management. Transformational change is however connected with crisis situations or is forced by more extreme external circumstances, which is not everyday situation for companies. (Prosci editors, 2018)Action is more about communication, getting people involved, establishing system and creating actions. Well, let's focus on steps during action.

Communication

Results from our foresight research have to be presented to the company, means authorities, stakeholders and leaders. That also depends on company, but mainly results are presented to people who are company – decision makers. This part can be not favorable mainly for people presenting their results. Foresight is not so common and people who did not meet this term before can be suspicious. Or audience won't be pleased with results that don't want to hear, for example changes that needs to be done. So, the consultant has to be prepared well for the final presentation of results.

Action Plan

People more do something while feeling urgency or anxiety. So, the great motivation can be opportunity or crisis in the air, the opportunity in reaching a preferable future and to avoid undesirable future. Here we must decide what will be our more concrete milestones on the way and who will be working or responsible for that. During implementation of action plan is good to speak with people and listen maybe feedback from our employees can help us to effective our efforts more. For example, if you give task to production manager and offer him solution how to reach it, the person can come with better ideal or process how to reach it. This stem is really about concretizing who will do what. Company should distribute tasks and responsibilities wisely. We must still have on mind it is crucial to reach our goals not to overfill people with not useful duties.

Create system

Make one -off foresight study and implement plans it not end. It does not mean that we will be successful forever because we already have plans. Environment around us is still changing every day. To be prepared and flexible we need fresh information all the time. We need to

create and set system that will help us with that. The System will be still searching information, monitoring signals looking for drivers of change, system which will provide continual scanning and reporting. Described system should informed us about what is going on outside and that will help us during decision making and so on. If we see that something is changing or moving, we can edit out plans to reach desirable future. Maybe creating of permanent foresight department can be suitable.(Ratcliffe, 2017)

Conclusion

We have several qualitative studies about foresight or more about corporate foresight. We still miss quantitative studies which would help us map the foresight in the world. So, we don't know a lot about corporate foresight practices and outcome. Foresight has not as long tradition as for example biology. So, there is still struggle with terminology. Some companies struggle with knowledge. It also happens companies pick not suitable methods for their aim. Well we see foresight still has challenges to improve. But in practice we can find successfully implemented foresight as for example Shell royal Dutch company. I am sure these limitations will disappear in the future, with more foresight practices spread, shared knowledge, more foresight school's absolvent's and so on. Now I would like to use methods described above and outline their implementation on company example. (Hammoud & Nash, 2014)

8   Practical part - implementation of selected foresight methods on the example of the CZ Eika s.r.o. company

Introduction

In practical part of this paper I am going to implement foresight framework described above in a real company. The company name is CZ Eika, s.r.o., it is located in Prostějov in the Czech Republic. The company is producing capillary and boiler thermostats. I picked mentioned company because I worked there for several years. During my work I will use my experiences and information about this industry, also my colleagues' opinions and know-how which I hope will allowed me to create a professional analysis. Now let's begin step by step.

8.1   Framing

Topic: Corporate foresight for company CZ Eika, s.r.o., future of thermostats

Environment: Organization, immediate and global level

Time horizon: Medium – term, up to 10 years

Geography: Europe

Primary research:

General Information's about the company

CZ Eika, s.r.o. (lately used as CZ Eika) is located in the industrial zone in Prostějov. Company´s main activity is production of capillary and boiler thermostats. Final products are used for production of electronic baking ovens and boiler water heaters. The firm was established on 15.01.2001 and is focused mainly on trade within European Union and Eastern Europe. Basic capital is 135 000 000 Czech crowns.(rejstrik firem, 2000-2019)CZ Eika is owned by Spanish investors which are the Mondragon group, fully Mondragóncorporacióncooperativa and cooperative company EIKA, S. COOP. MCC group is one of the biggest companies in Spain, it primarily focuses on production of components for white technology and automobiles. All MCC group subsidiaries are based on co ownership of their employees which results in the fact that companies are managed by democratic voting of employees. Parent company of CZ Eika is Eika, S. COOP or as CZ Eika employees call it Eika Spain. Eika Spain was established in 1974 and focuses on production and development of cookers, ovens and hobs. In Eika Spain portfolio we can find radiant heaters, control for cook tops, control for ovens, tubular heating elements and radiant heaters for ovens and electronic thermostats. Production of mentioned products is distributed between Eika. S. COOP and subsidiaries in Poland, Mexico and Czech Republic. CZ Eika holds certificate of quality and safety work ISO 9001. Firm runs

in three-shift operation and focus on mass production. Company manufactures several types of products with different parameters and a large production volume. Production itself is divided into several sectors which are Sensitive device, switch, selector and production line 1 and 2. Thermostats can be divided into three main parts in terms of function and production. These are the sensitive device, the switch and the selector. Each part is produced in the production hall and then all the components are assembled together on two production lines. Right now, the production is done in each of the three shifts, in this case it means continuous production on weekdays is divided into morning, afternoon and night shifts.

Picture 11. Company CZ Eika, s.r.o., resource internal documentation of company

Sensitive device

Sensitive device consists of bulb, capillary tube, sleeve, multiplicator, membrane, ceramic and oil. The molded tube, or bulb, is filled with oil. The oil extends the signal through the capillary to the membrane. The membrane transmits the oil pressure to the ceramic multiplier and to the switching mechanism. Thus, the detected ambient temperature switches on or off the switching mechanism. The sensitive device must always pass through a vacuum chamber, where it is filled with oil and then removed to a furnace, the purpose of which is to stabilize the sensitive device, or to detect faulty, insufficiently sealing pieces.

Picture 12. Sensitive devices; resource internal material of the company

Switch

The switch consists of ceramics, screws, rivets, contacts and a movable contact. The switch responds to the pressure exerted on it by the multiplier together with the ceramic. Depending on the detected pressure, the switch closes or opens the electrical circuit.
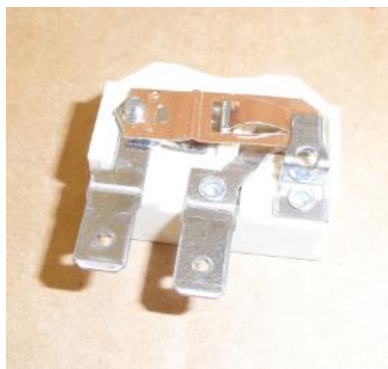
Picture 13. Switch; resource internal material of the company

Selector

The selector consists of metal, shaft, nut, pad, clamp and vaseline. We set the desired temperature with the selector. The required temperature is set by the shaft, which the company produces with its nut itself on its lathes and then externally zincs. Shaft movement is limited by the clamp. More or less the shaft can be rotated between 0 ° - 270 °. The larger angle of rotation of the adjusting shaft, the higher the temperature is. The nut is pressed into the metallic, then the pad and shaft are deployed and then the clamp is added from below.
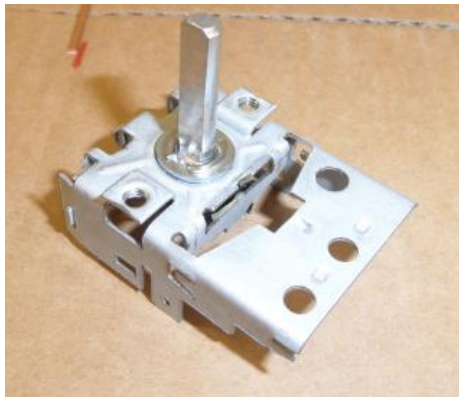
Picture 14. Selector; resource internal material of the company

Production lines

There are two production lines in the company's production hall. On these lines, the thermostat is assembled from the semi-finished products mentioned above and lines also take care about measuring, setting and also adding a plastic cover. After that the thermostats are packaged in a box of 4 reglets of 45 pieces each (according to different customers' requirements).

Final products

By the process described above we get the finished product, capillary thermostat. The thermostat is designed to control the temperature of electrical equipment, it has no own electricity consumption. Therefore, it works on a mechanical principle. CZ Eika, s.r.o. manufactures two types of these thermostat, these are thermostats for ovens and boilers. Every customer receives a thermostat according to their requirements, so the thermostats have many different designs for both ovens and boilers. Company produces between 2 and 2,5 million of thermostats per year.

Picture 15. Final product; resource internal material of the company

Company structure

Head of CZ Eika is director, who is direct supervisor of several departments. Departments are personal, financial, logistics, purchase, quality, production and maintenance. Each department has its own manager who delegates and manages work to their own subordinates. At present, the company is also using some external employees as environmental manager to meet legislative regulations. All mentioned above are located in CZ Eika building, where we can find offices, production hall, dining room and warehouse.

Stakeholder analysis

Oxford dictionary defines stakeholders as persons with an interest or concern in something, especially a business. Or wider, denoting a type of organization or system in which all the members or participants are seen as having an interest in its success.(dictionary, 2019)Anyway, stakeholder can be a person, group, organization or business that can influence interests of company, or can be influenced by our company. Basically, groups or people interested in our business. (Freeman, 1984)In my purpose I will use the "stakeholder view of the firm" established by Freeman which I edit due to company purpose.
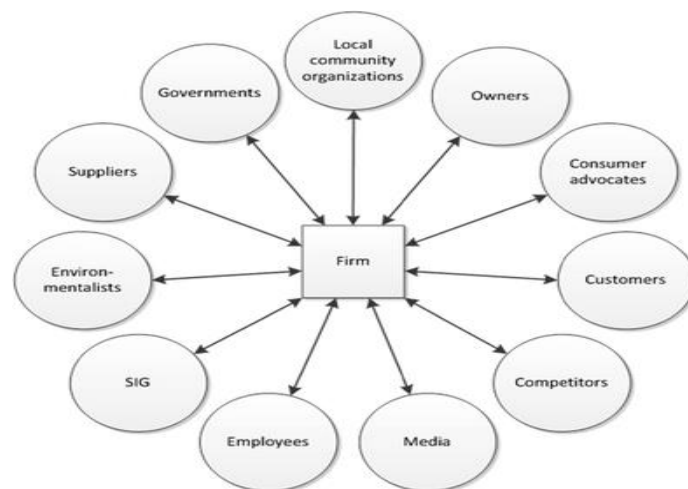
Picture 16. stakeholder analysis, resource Freeman (1984)

CZ Eika stakeholders

Owners – MCC group, Eika S. COOP, co - owners of Eika S. COOP

Consumers – People buying white electronics and automobiles

Customers – Whirlpool company Polska Sp. Z o.o., Amica S.A., Gorenje group, Mora Moravia, s.r.o., Družstevní závody Dražice, s.r.o., Fisher and Pykel appliances etc.

Suppliers – Tecnofar S.p.a; Grupo Usotor; Eti Elektroelement d.o.o.; Nemaco;

ChiasingFasteners Industrial; ITW Fastenersetc.

Competitors – E.G.O. Blanc und Fischer & Co. GmbH; Tecnicas de Calentamiento, SA TECASA; COTHERM S.A.S; MMG Group

Employees - agency employees, production operators, shifts leaders, maintenance workers, management, director, authorities – as in the Czech Republic, as in the Eika Spain, future employees

Government – mainly the government of the Czech Republic and European Union

Other interests' groups – Local communities, media, personal agencies

A) **Primary stakeholders**

Owners, Customers, Suppliers, Employees, Government

B) **Secondary stakeholders**

Consumers, Competitors, Other interests' groups

Procedure

In framing part of this work, I started with definition of topic of my foresight. I was interested in what happens with thermostats and how can company CZ Eika prepare for it. The thesis will provide Foresight for company and its product. I think foresight activity has to consider all three environment levels. We have to scan organizational level to find weaknesses and strengths etc. to beef up our position, communication and cooperation within company. Immediate level is important aspect, to catch the signal of technological change or direction of the future. And finally, global level whether we like it or not influences us anyway, so it should be covered in our process too. While considering time horizon I refused short term period, because I would like to have enough space to include higher amount of changes, although it may be difficult to cover all the changes that are possible to happen in long term horizon and as a result not so effective and maybe misleading. Geographical horizon where the company is located in Europe. Most of the company's primary stakeholders are also located in Europe, it is area of company's trade too. Europe is than our geographical horizon. However, it does not mean that we will focus strictly on Europe and will be blind to the rest of the world. Where it is necessary to take into consideration other parts of the world and I will do so. My next step was to gather primary data. So, I went through CZ Eika´s internal documentation, I asked employees and collected their judgmental or practical information. I also went through all company, especially production, to understand the product. Later I summarized the acquired information and put them down. Then I used stakeholder analysis and identified stakeholders, who I thus divided in two groups. "Primary stakeholders "refer to the groups that are existential to company's everyday life and „secondary stakeholders "are those who have not so tight relationship with CZ Eika. I am going to use the results in the next steps.

8.2   Scanning

CZ Eika´s history

Since CZ Eika´s opening in 2001, the factory produces cast iron hotplates and heating rods. In year 2003 the production was extended with capillary thermostats and in 2006 there was also established production of bimetallic thermostats. The whole production hall was occupied by and used by CZ Eika. The number of employees oscillated around 250 – 300 people. Products were exported not only around Europe but also to Latin America. The company prospered till the 2009 economic crisis hit and later with decrease demand of cast iron plates time for changes came. To survive, Eika Spain decided to restrict company and ended production of cast iron hotplates and heating rods in CZ Eika and moved the production of heating rods to the subsidiary to Poland. Production of hotplates was stopped. Low demand and no knowledge of new markets led to export and destruction of lines. Old

line was sold to the Ukrainian company Electron - T and new line, which was only three years old was destroyed, because there were no buyers interested in it. The parental company without any warning just dismissed around 100 people telling them not to come to work tomorrow. By removing production almost half of production halls were released. CZ Eika decided to rent this area to plastic press company KP KOPRO, s.r.o. The company then continued with production of capillary thermostats and bimetallic thermostats and started to work on new project, production of safety cutout or safety thermostat. After economic crisis, the economy slowly started to recover and in several past years the economy extended. CZ Eika, however, had to face one of the extended economy side effects, lack of people. With higher employment ratio, the fluctuation of personnel occurs. CZ Eika had problem finding reliable and long-time personnel to sufficiently cover their production. So Eika Spain decided to move the production of bimetallic thermostats to their own company in the north of Spain in city Etxebarria, Basque country. Nowadays the number of employees decreased on around 100 people. In CZ Eika production appeared problems with old machine production equipment. There is also one periodical problem. Production hall does not have air conditioning. As a result, the temperature in the production hall changes during the year according to the outside temperature. Which is as it turned out problem for thermostat production during summer days, when hall temperature is high. High hall temperature makes production more difficult and is also responsible for higher amount of failure pieces. Another issue relates to high temperature, people must have more frequent breaks from work and as a result, production decreases. All mentioned is a result of long time without any investment into the production area. To solve this situation with thermostat production headquarters from Eika Spain decided to stop project Safety cutout. Nowadays headquarters in Spain also decided to release financial help which can support company with investment and make situation better. Investment will be aimed on machine and production hall.

SWOT analysis

Strengths	Weaknesses	Opportunities	Threats
regular communication with Spanish headquarters	less support of parent company	understanding changes on market	another economic crisis
employee's coherence, will and ability (management espec.)	long time non-investment into a production	periodical scanning of signals	changing customers preferences
employee benefits, annual barbecue for employees	old machine equipment, disorders, not so effective	machines equipment innovations	lack of work power - people
relatively good relationships with customers and suppliers	focus on just one and old product	Implementation of new technology	entrance of a new or advanced product on the market
flexible solutions for urgent shipments	lack of stabile employees in production	introduction of new product	
good condition of the building	lower wages compared to neighboring firms	air condition implementation	
M + 3 analysis	keeping delivery dates		

Table 2. SWOT analysis, own resource

I involved 5 employees from the company's top management in my analysis. I introduced what SWOT analysis is and gave 15 minutes to brainstorm the four dimensions of analysis. I put down the ideas on black board, then I asked them to mark the main ones, which are displayed in table above. Now I would like to summarize the outputs. I think CZ Eika has strong, very loyal and responsible collective which is willing to cooperate and work on united goals, even though their wages are not as high as in the CZ Eika´s industrial zone neighborhoods. Another company's strength is its flexibility with fast and urgent deliveries, although sometimes the company is forced to solve urgent delivery because it is not able to keep the agreed delivery date. Next strength I see in making M+3 analysis which I will describe later. So, we can see weakness in production area which is not able to fulfill all orders. There are several sources of the mentioned issue, old production equipment, long time without investments into the production, missing air condition or fluctuation of production operators. In my opinion interesting point is that even with annual communication of parental company Eika S. COOP there is a lack of their support. Anyway,

there are several possibilities that would help the company to improve for example searching for signals on the map and understand the market. With monitored markets and trends focus on development of new technology and or also a new product. To safe production is clear that the investment to machine innovation could also improve firm situation. Because, as we saw in the past during economic crisis, it is better, to have more than one product. And it is also better to have more to offer to the clients to satisfy their demands. Another element that would help to stabilize the company's situation can be increase of wages, which can stabilize situation with lack of employees.

M+3 analyse

This analysis is a little prevision. Logistics department produces this document before end of each month. They gather data as customer's previsions, already existing orders and use their own experience. Then they organize them into a table where you can see orders and previsions for month M, which is coming month and three other months. For example, if today is 27th of March, the logistics department will create M+ 3 analysis for month M which will be April, and months M1, M2 and M3 will be May, June and July. This document is then communicated with parental company Eika S. COOP. So, it is clear to see if any changes in demand will come, fluctuations in orders. But the scope of this prevision is too short. If economic crisis arrives or customer preferences change, the company will realize too late. And there will not be enough time to react to the situation. This analysis also serves as basic information for material orders. So, the company can apply trends of lean production and turn as much money as it can.

Porter's five forces

Existing competitors

On European market we identified many of competing companies, some of them produce both boiler and oven capillary thermostats, some of them are focusing on one or other type. The biggest producer is German company E.G.O with year production estimate around 3-4 million pieces, second place in the production ranking has Tecasa and CZ Eika which produces around 2-3 million pieces of thermostats per year. By estimates, the third place in ranking has Cotherm and MMG. The remaining companies are smaller and have less market share. European thermostat market consumes around 8 to 10 million pieces of thermostats per year. So, we can see CZ Eika, has relatively good position on the market. With lots of competitors on the market concurrent pressure is high, what decides is price, service and production portfolio. For Example, E.G.O. and Eika group has wide production portfolio, because it produces more than one component for oven as control cooktops, tubular beating and so one. Therefore, it is attractive for clients to allocate several elements for production by one supplier.

New competitors

Since the market of thermostat is dense with producers so it does not indicate entrance of new competitors or establishing new companies. There is only one exception. Companies from China are now trying to enter the European market with thermostats. They focus their efforts it in two ways. One is to supply cheaper thermostats from China to customers in Europe, and the second way is to buy customer companies in Europe and supply them by own Chinese products. So, it has high potential co change market conditions.

Customer influence

On the market we can identify a lots of customer companies. Producers of ovens and boilers. Most of them are used in every day's life. These are for example Whirlpool, Mora, Gorenje Group, Miele etc. So, they have strong force, their demand will influence thermostat markets. Changing their preferences from capillary thermostat for electronic thermostat may mean the end of companies producing only capillary thermostats. They are influenced by their customers by people preferences. And it is definitely strong power. I will focus on consumers preferences later in STEEP analysis.

Substitutes

What can replace or substitute capillary thermostat is electronic smart thermostats. Or introduction of totally new technology, for example new super modified microwaves, which will bake food in few minutes and will need only safety cutout. Or new powerful water heater can mean the end of boilers.

Supplier influence

Cost of transport will decrease and in the globalized world is not so hard to allocate new suppliers in cheaper markets as in Asia and so on. So, there will be more suppliers and sources, which gives and will give more power to CZ Eika. Also, it can influence supplier prices and achieve even cheaper material for production.
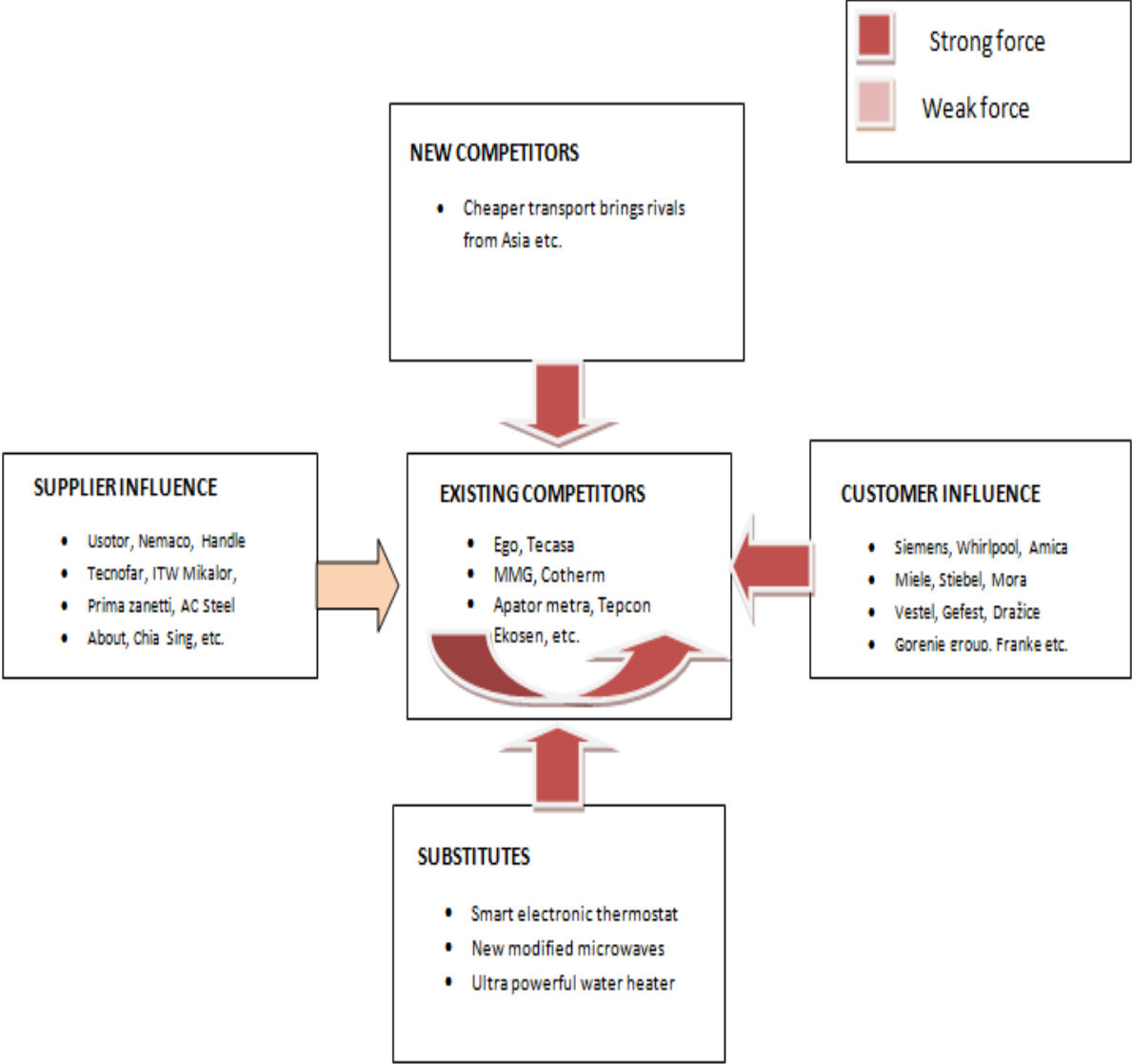

Picture 17. Porter 'five force; own resource

STEEP analysis

Social dimension

- Population growth will increase demand products
- People will have more money, developing countries will be new market for older technology boilers and ovens
- Increase of educated people will mean less employees willing to work in production lines
- Rising generation Z will focus on IT, applications, smart technology which makes life easier
- Increase of demand for attractive design products

According to the United nations prediction of population growth in year 2030 will be 8, 5 billion people in the world. Although driven by growth in developing countries. That can mean more possible customers, in developing countries people obviously don't have so many financial resources, but still it can mean wider market for consumption of cheaper and old technology. Level of education and higher education will grow, people won't be willing to do unqualified jobs. Companies may look for manpower for factories in developing countries, where education won't be as much accessible as in the developed countries. Gross domestic product will also increase around the world, people will be richer and will be able to afford to buy more, new generations tend to use and search for new technologies and applications, green houses and so on, things that make their lives easier.
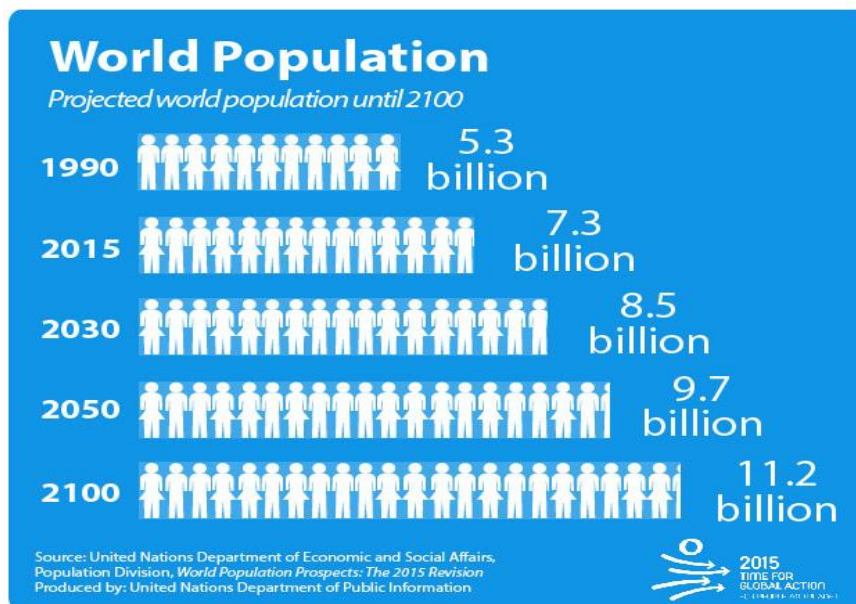
Picture 18. World population prediction, resource www.un.org

Total Population Size by Education

World: Medium Projection

Under 15 ■ No Education ■ Primary ■ Secondary ■ Post Secondary
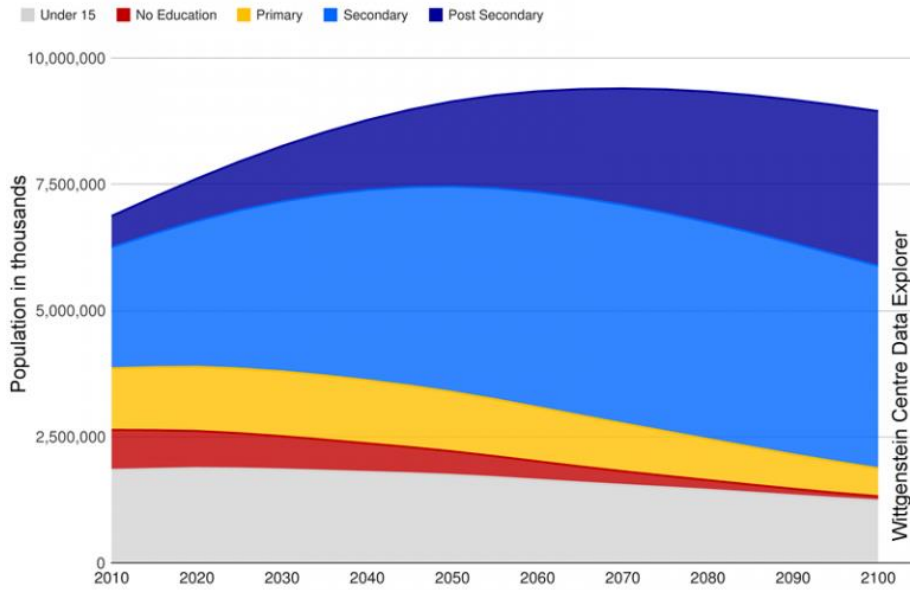
Picture 19. Total population size by education, resource www.iiasa.ac.at

Gross domestic product (trillion 2005 USD PPP)
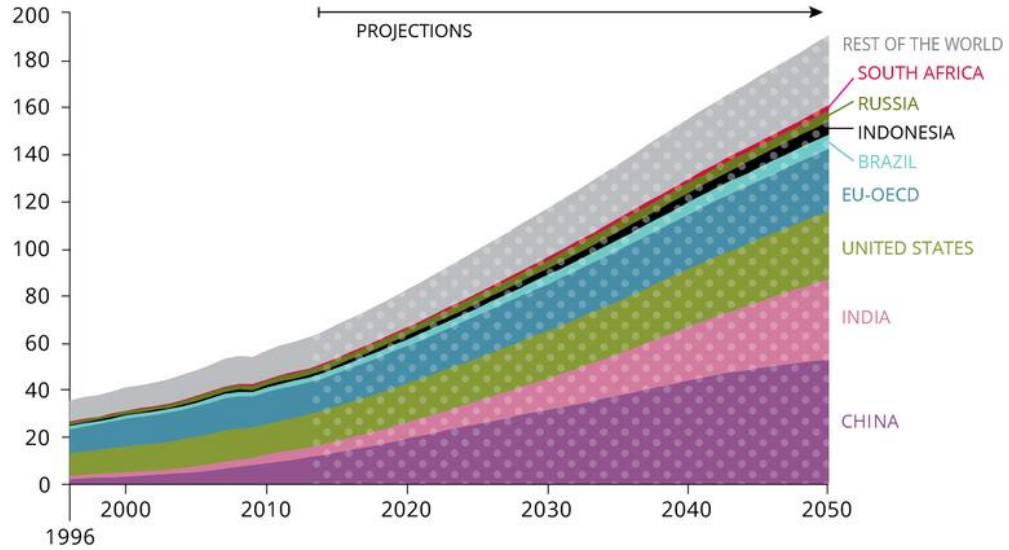
Picture 20. Projections of GDP; resource www.eea.europa.eu

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Technological dimension

- Development of Industry 4.0, smart factories, robotic systems, replacement of manpower, modernization of machines and lines
- Increased demand for smart, IOT technologies
- Pressure on energy saving products and systems
- Design product demand, companies will invest to redesign of their products
- Higher pressure for efficiency and productivity, mass production
- Race for new and better products, investments to technology development

Fourth industry revolution or Industry 4.0 is typical trend that we can see around the world. Companies are trying to more automatist or robotize own productions. So, they can be more productive and avoid human faults in production. Thus, we can see future in production with robots, not people anymore. That also means higher demand for new and smart technologies for production(Marr, 2018). Big pressure on development of new technology. Technology serves the people, and people will more insist on sustainable technology from renewable sources. We can watch the trend as more and more companies implement environment management systems like ISO and EMAS(European environment agency, 2015) The world is highly changing every day, we can see new technology or applications. By time race for new products and technologies become even more faster. Companies will work on development of products every day.
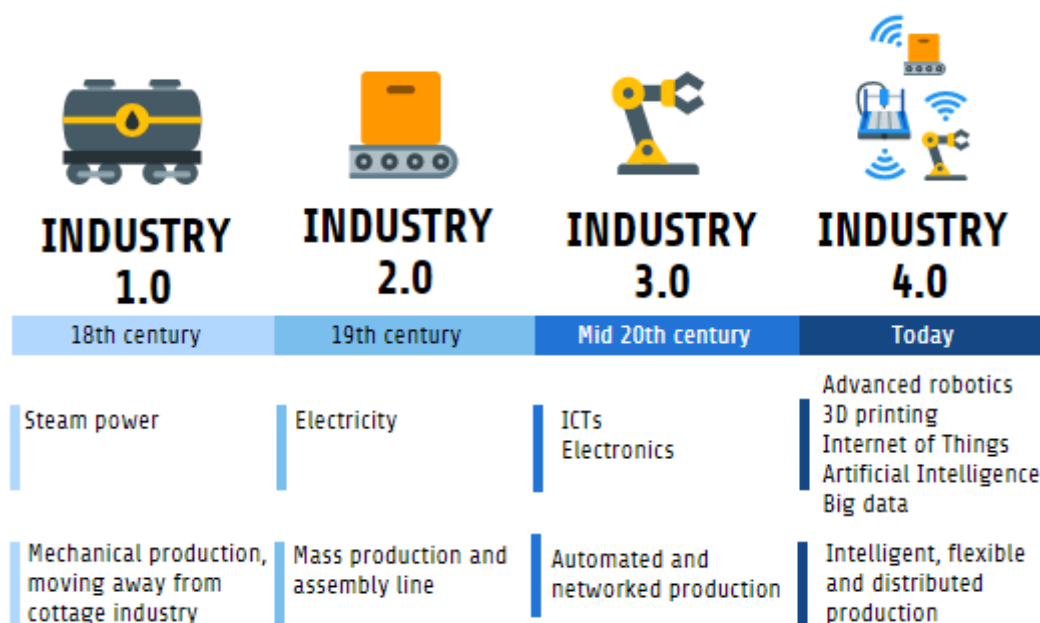

Picture 21. Industry evolution; resource www.ict4blog.wordpress.com

Economic dimension

- Cheaper labor in developing countries, outsourcing
- Increase of developing countries, more markets
- Government-driven minimum wage growth
- Greater competition and price pressure
- Alternating business cycles
- Another economic crisis

Companies will have two options to keep themselves in business implement industry 4.0 and develop new products and technologies to satisfy customers' demand. Or relocate their productions in to developing countries with cheaper manpower ad possible new markets for older products. Outsourcing can help developing countries with their economics situation. Another incentive for outsourcing or industry 4.0 can be government driven establishing of higher minimum wage. And of course, economic cycles and possibilities of economic crisis can change the market.

The Economic Cycle
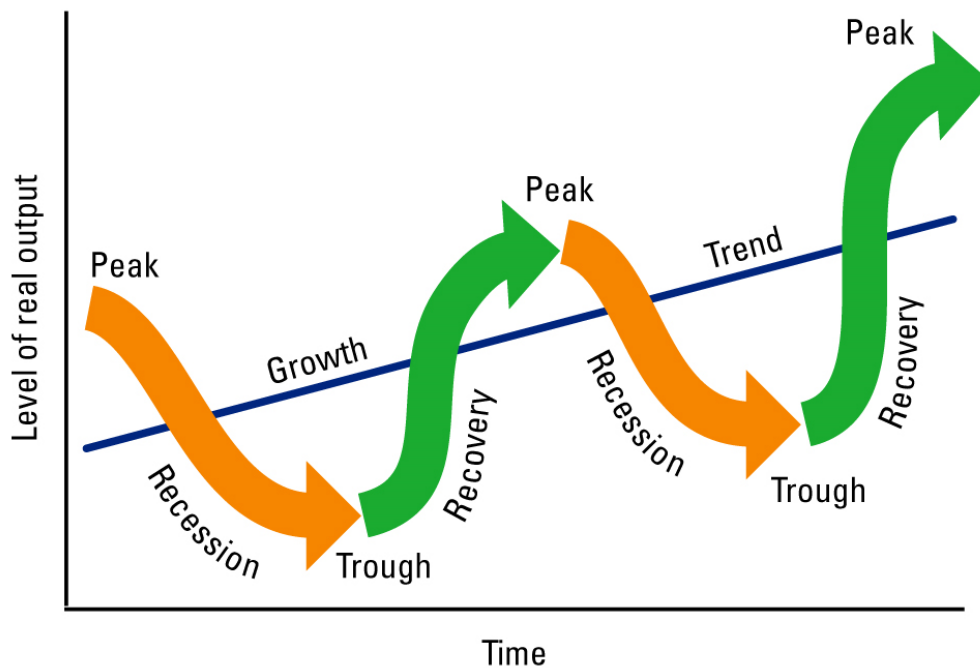
Picture 22. Economic cycle, resource www.mrshearingeconomics.weebly.com

Environment/ Ecological dimension

- Increasing pressure for sustainable production and products itself
- Demand for companies with environment friendly certificates
- Peak oil or coal crisis followed by blackouts
- Tightening of environmental limits

What can happen with nature, our earth? Thanks to media spread of information about global warming, air pollution and so on people started to think about their environment. We can see governments discussing the environment almost every day. Efforts are for example adoption of sustainable development goals of United nations' program. So, we can watch the trend of sustainability. But still our energy comes from not renewable sources, what can happen when we reach peak oil, companies can deal with blackouts. Focus on renewable sources of energy will increase. If companies will not do it by themselves, EU or government incentives helps.

Picture 23. Sustainable development goals, resource www.un.org

Political dimension

- EU legislative changes
- Possibility of international conflicts or wars
- EU disintegration
- Migration

In political dimension, we can predict implementation of new legislatives or laws. But international policy scene is uncertain. What happens if European union splits? Maybe we are at the beginning and the first signal is BREXIT. Custom and trade union can stop too, it may have a high influence on business. Logistics processes will be more expensive and demanding. Of course, international or even local conflicts may occur in the future. We must be aware of rise of populist parties. In the light of terrorist attacks may xenophobia rise. Another trend is migration. Migrants can mean cheap labor which can help companies during the time of high employment or even not robotized factories.

Picture 24. consideration; resource www.economist.com

8.3 Forecasting

Trends

- Growth of educated people
- Attractive design products
- Smart technology
- Energy saving products
- Efficiency and productivity, mass production
- Industry 4.0
- Cheaper labor in developing countries
- Environment friendly certificates
- Robotization

Cycles

- Alternating business cycles, economic crisis
- Higher demand for thermostats during autumn and winter

Plans

- Investments

Constants

- Parental company Eika S. COOP

Projections

- Smart households on controller

Baseline future

In the creation of baseline production, I asked three of my colleagues to go through trends, plans, constants and projections and ask them to extrapolate the main ones and describe how the future may look like. All of them agreed on massive implication of demand for smart and low-cost technologies. They also suggested time of entrance of trend. Since they are on thermostats market for around 10 years, the estimations are based on their experiences and discussion with CZ Eika customers.

After assessment of trends, cycles, event and planes baseline future should look as follows. Consumers demand in smart technologies saving energy and money will continue. Pressure and incentives of government for energy – saving appliances will be also forcing producers of boilers to bring better and more developed products. It will mean high demand for smart electric thermostats which can be connected to the home network and according customer's needs will heat water at a specific time. Situation with ovens will be different, electric

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thermostats will not help oven to safe energy. However, with higher demand on designing interesting products and new mass production of electric thermostats, oven producers will be forced into using of electric thermostats. In five- or six-year boiler producers will start to use electronic thermostats, which will by the time push away capillary thermostats from boiler production. Implementation of electronic thermostats to ovens will happen later, estimation is between eight or ten years. Capillary thermostat producers will have developed electronic thermostat, however, production of them is and will be expensive. With higher demand, they establish new production line, so they can start with mass production. Production lines will be very automated and robotized. First producers will have a great chance to gain new customers and better position on the market for the future. Producers of capillary thermostat would be able to sell their products for a while. However, in eight or ten years will be no demand for capillary thermostat in Europe. So, producers will sell their lines to developing countries or they can relocate the production into a developing country. To improve producer's situation on the market development of the controlling desk for household network will follow, in order to have wider portfolio and chance to gain new clients.

Alternative futures

To identify key uncertainties, I began with brainstorming. I tried to gather and think about possible events, issues and situations that may happen and change the future. Then I picked the main one with the highest influence and others that I think are the most possible to happen.

Key uncertainties

Events

- New microwaves stop demand for ovens
- New water heaters stop demand for boilers
- Strong economic crisis
- Totally new way of food and water heating
- Ukrainian oil pipeline interruption
- New portable grill - ovens

Issues

- Increase of energy price
- War conflict in Europe

Situations

- Vegetarian, vegan and raw foodyism may spread more and people will not need ovens

New type of flow water heaters	People will buy them istead of boilers	Increase demand for boilers	End of boilers and thermostat
New type of baking microwaves	People will buy them as a suplmenet for oven	Increase demand for ovens	End of ovens and thermostat
Economic crisis	People will have less money	Smaller production of ovens and boilers	Less ordrers of thermostats
Ukrainian oil pipeline interruption	Market crisis	Shock and smaller demand	Increase of demand for gas ovens
Increase of energy price	Increase demand for smart technology	Increase demand for gas ovens	Longer live for capillary thermostat
New way of food and water heating	People will not need boiler and oven	Increase demand	End of ovens and boilers thermostat
Increase of energy price	Increase demand for smart technology	Increase demand for gas ovens	Longer live for capillary thermostat
War conglict	Demand for weapons	Business and production interruption	Change factories to produce weapons

Picture 25. Future wheel; own resource

Alternative futures

On key uncertainties mentioned above I based four alternative futures that may happen. Each of them is named and described below.

New technology

Entrance of a new technology on the market, as a new type of microwave that can bake or flow water heater or even new type of heating. It could mean increased demand for new smart thermostat, electronic thermostat or end of thermostats.

Economic crisis

Arrival of another economics crisis can mean threat for business. Decrease in consumption followed by decrease of orders may cause problems or might even close the business. Big and strong companies with more products will survive. Smaller ones may die out.

New way to use of ovens and boilers

New way to use of ovens for example as portable oven - grill may become searched product for outdoor camping. Portable folding boilers from light materials can be used in nature or in cabins. So, demand for thermostats in modified form will increase.

Increase of energy prices

High increase of energy price will mean turn back to gas ovens which will mean higher demand for older type of thermostats, capillary thermostat.

8.4   Visioning

During visioning phase I used method of interviews and again asked several of my colleagues to identify company values. We gathered several of them as you can see below. Then I asked them two questions – "What do you think that would help CZ Eika to survive in the future? Is there any issue that we have to remedy? "Then I divided the answers into 4 main groups as the visions. And I went deeper into the topic in part of consideration. Consideration helped as a basic for the creating of preferred future and creating vision.

CZ Eika values

- Teamwork
- Leadership
- Hard work
- Flexibility
- Brand
- Reliability
- Innovation
- Preparedness

Visions

- Higher profit
- Higher sale
- Product enhancement
- Improve reputation

Consideration of present and preferable future

To achieve desirable situation lots of line of goals have to be determined. The goals are connected and linked to each other. However, the main point or aim is simple because it is just same as in every company. Be richer, be better. The first point on the list is higher profit. Since competition on the market is strong, firm cannot just out of blue increase prices of thermostats. Thermostats cannot be made with bigger added value only way how to earn more money is by producing and selling more of them. Since company has problems with old and not reliable machines, investment and innovation of them has to be done. It is the only way how can it produce more pieces faster and reliably. Since signals tell that capillary thermostat will not live forever company has to consider amount of investment and the way how to spend it. Maybe is not wise to construct and buy new production lines for capillary thermostat. Lesson from the history, as mentioned above, CZ Eika in past bought a new production line for hotplates buthas to stop the production few years later and then even destroyed the machine because the was no more demand for hotplates. To support produces techniques and methods used by company it could help to establish new process department, which should monitor, evaluate and improve processes within the firm. What

would I suggest is to establish development department which would focus on the development of electronic thermostats that will later replace capillary thermostat. But parental company Eiska S. COOP already developed electronic thermostat and plans to establish lines for mass production in the future in EIKA S. COOP in Spain. Since that there is no need for CZ Eika to develop electronic thermostat. One product to sell is simply not enough. CZ Eika was in past few years developing new product security cutout. So, they already have several machines for safety cutout production. Aiming to be more competitive and gather more buyers CZ Eika should continue with development of security thermostat. Since future of this product is longer, this type of thermostat has wide use. And mechanical type will be always more reliable than electronic one. And it does not need energy intake. With another product company can reach new markets and gain more money. It would be also an advantage for parental company to have wider portfolio of products. With higher number of produced capillary thermostat pieces company must sell more. That means either starting of negotiations with current customers to increase number of sales or searching for new markets for example in Asia and Africa. As I already mentioned company has issues with insufficient production followed by non-compliance delivery dates. That did not create good reputation of company. To avoid it and decrease risks of it company should also keep security stock reserve.

Preferred future

CZ Eika will invest in modernization of their production, machines and equipment. This will ensure an improvement in production results and reach 4 million pieces of thermostat production per year. Products will be sold to current customers in higher amount and will be also sold in new markets in Asia and Africa and Latin America. Within two years company will be also selling security thermostats. Proved by customer evaluation company will achieve good and reliable reputation. With new process and monitoring implementation, company will be able to improve own actions in real time.Company will be able of flexible reactions if any new situation occurs.

Vision

Innovation of production will improve our productivity and results increase production of 5 % per year. Extend our products on world market. Start with selling of safety thermostat in two years.

8.5 Planning

In phase of planning I focused on clarifying what company is and what does it wants. Here we should look again on what are company values, mission and vision. Then I started creating strategic plan and setting goals. I asked questions how can we reach our goal and think how many time will be needed to fulfill our aim. In next step I was looking for indicators and measurements so we can observe plan in real time. And I put information in

table. Then I focused on alternative futures mentioned above and tried to outline how company should react if alternative future becomes true.

Values

Teamwork, Leadership, Work hard, Flexibility, Brand, Reliability, Innovation, Preparedness

Mission

To produce reliable thermostats for our customers so they can produce equipment which make life easier for people.

Vision

By innovation of production improve our productivity and increase production of 5 % per year. Extend our products on world market. Start with selling of safety thermostat in two years.

Strategic goals

- Innovated production
- Produce 5 % more each year
- Deliver thermostats to new customers
- Produce and sell safety thermostat
- Actual information about market

Innovated production

Company will study information about their production. Probably the most important information provides us OEE. OEE is an Overall Equipment Effectiveness; it is standard for measuring manufacturing productivity. It shows production losses caused by downtime, repairs or machine failures. So the values of OEE on machine in production hall can give them information where they can improve, what causes the most problems and so on. Using OEE company will identify problematic areas, which then will be improved. Improvement will be done as new machines or adjustment of machines or introduction of new and faster process. Innovation will surely require financial and human resources. It is a big task and CZ Eika will establish new position of process manager, who will be responsible for the whole process. This person will introduce new procedures and will also seek for the new equipment.

Produce 5 % more each year

During next 10 years company will rise their production over 50%, that means in year 2029 company will produce more than 3 million pieces of thermostat. This goal will be achieved by innovation of production equipment and new faster processes. This goal has tight connection to the previous one.CZ Eika will also ensure efficient labor which is needed for production. They must make company more known and popular in the region. CZ Eika will raise wages and adjust advertising campaign to be more attractive for people and bring new reliable employees.

Deliver thermostats to new customers

With more produced thermostat company has to ensure sufficient number of customers which will buy the product or sufficiency amount of sales. The company's sales managers will start negotiation with existing customers to raise amount of year sales. With sufficient production and better reputation of the company they will also try to sell thermostats to the competition's customers. Sales manager team will watch and map new markets in the Africa, Latin America and Asia where they will offer Eika's products.

Production and selling of safety thermostat

The company already worked on this project but stopped it. Analysis of the reasons why they did it will have to be done, after that all the fact about that project will be gathered. Thanks to that analysis they will be able to find the correct point from which they can restore this project. After that, team for this project will be established. Team will work on product development, production processes and product design. Sales managers will find customers for safety thermostat. With production line and sufficient number of people product will be mass produced.

Actual information about market

Since today's world is changing very fast it is crucial for companies to prepare for the future. It is a question of survival. So, the company will implement regular scanning and monitoring of the market. In regular term new function in the company, foresight manager will seek for important information. This person will be hired in this year. Foresight manager will be external foresight specialist. Information will be processed in form of final evaluating report. The results will be discussed and then the necessary steps will be taken.

Strategic plan and milestones

Long term aim: Innovated production

Short term aim: Implementation of new equipment and processes

Reduction of production time per one thermostat for 5%

Measures: Amount repair costs

Number of failure pieces

Production ratio

Milestones: Hiring of process manager, OEE and production scanning, OEE evaluation, Identification of weaknesses, Suggestions of reparations, plan of reparations and innovations, implementation of projects innovations.

Milestones plan:

At first personal department must announce a tender for process manager. From candidates pick the right person who will meet our expectation, director with personal manager have to describe what they expect from new process manager. In three months, this person start with getting acquainted with the production. Then the person will do OEE scanning to gather necessary information. Then evaluate and identify weaknesses of production and prepare report with suggested reparations. Report will contain problems and several suggestions of solving them and of course cost estimation. Report will be thus discussed with headquarters and will result in plan of innovations. Innovations will be divided into projects and every project will have date of start and date of finish and measuring indicators. Results will be discussed weekly to ensure smooth running. Indicators of right process of production innovation should be decrease in repair costs, lower number of failure pieces and higher production ratio.

Long term aim: Produce 5 % more each year

Short term aim: Sufficient number and quality labor

Implementation of new equipment and processes

Measures: The amount of fluctuation

Number of employees

Production ratio

Milestones: Project innovations, neighborhood wages scanning, Wages decision making, increase of wages, creation of advertisement, choosing placement and place ad, choose and manage account on social media, plan of trainings for employees

Milestones plan: Part of this goal is innovation of production, this goal is more outlined in previous one so I will focus more on the cover of sufficient labor. First step is map amount of wages in company neighborhood, personal department will search for information on web sites or ask people from their background who works there to gain the information. Results will be covered in report which headquarters will discuss and decide how much can the wages raise. Then personal department will present an image of advertisement and areas where the ad will be placed. For example, public transport, billboards and so on. It must be communicated with owners of this property. Company already has a Facebook account; however, to be more in touch with people they can consider using another social media. Company will choose one person responsible for regular managing of the account to propagation of company on social media. Since company already has a training plan for newcomer employees, now they will focus on training plans. Company will provide anonymous questionnaires two times per year to gain employee's feedback to analyze what can be improved and so on. By doing this the employees can be satisfied on the workplace and stay for a long time.

Long term aim: Deliver thermostats to new customers

Short term aim: Realization 5 % of company year sells in new markets

Measures: Number of thermostats sold to new customers

Milestones: Scanning of Africa, Asia and Latin America thermostat markets, markets map, choosing new customers, contact companies and establishing communication, visiting customers and presentation of company and products, offering a deal

Milestones plan:

At first sales managers will team up and splits markets geographically. Then they start searching existing companies which produce ovens and boilers in Asia, Africa and Latin America. They will also identify competition and prices for their products. With this information they will create a map of these markets. With map fulfilled with information mentioned above they identify probable potential customers and contact them. Then they introduce the company and its products. Sales managers thus send samples of the CZ Eika thermostats and in next step they will visit these companies and offer them a deal which they will negotiate about. Sales manager will inform about their progresses monthly to a CZ Eika's headquarters.

Long term aim: Produce and sell safety thermostat

Short term aim: Revision of old project and develop the production

Identification of customers

Measures: Number of new contracts with customers

Number of tests

Number of produced pieces of security thermostat

Milestones: Production instructions, testing production on lines, testing the samples, setting production goals, identification of customers, negotiation and contracts.

Milestones plan: At first process manager has to do an overview of an old project, identify what is done, what company has already achieved. Then set the direction of the development. Develop the product instructions, which must be clear about how to product the safety thermostat and what will be its skills. Then production lines that are already in the company has to be tested, if they are working well or if any reparations or changes are necessary. Then production will start to gain first samples and test them. Also new production lines will require new employees to operate them. Process manager then evaluates results and set production goals, number of pieces produced per day and so on. Meanwhile sales managers will offer product to the current customers and will search for new ones. Then again start negotiation and bring contracts. So, the company can sale their new products.

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Long term aim: Actual information about market

Short term aim: Annual report of signals and possible implications

Measures: Existence of report

Milestones: Hiring a person, establishment of a new position external foresight manager, acquaint person with company, half year or annual report implementation, headquarters evaluation

Milestones plan: To have actual information of market company needs a person to implementation. Since it is not a fulltime job company can outsource that person. Hiring an external foresight specialist is the best solution. Acquaint person with company and aim. Person than will start with scanning and monitoring signals and so on. Gathered information will be presented to the headquarters so they can decide how the company will react on implications of future changes. First year person will introduce two reports, each half year so company can decide then if annual report is enough or market information has to be reviewed.

Alternative future scenarios

 New technology

If the alternative scenario one happens, new technology enters the market and in the Europe the demand for capillary thermostat will decrease. In that case CZ Eika can negotiate with parental company to move production lines for electronic thermostat to Czech Republic to have product to sell. Or CZ Eika will be pressed to end sales to existing customers and relocate to the customers in the developing countries, where still will be demand for an older technology. However, the death of capillary thermostat will be close. Thus, CZ Eika will continue only with one product, the safety thermostat. This will be still needed because it provides more certainty than electric safety thermostat. In that case CZ Eika will do a market research and will focus on development of another new product to empower their situation on the market.

Economic crisis

In case that another economic crisis hits problems for CZ Eika of course occur. With decrease of orders fewer pieces of thermostats are needed so CZ Eika will be forced to make production thinner, which will mean release of its employees. Then also reduction of shift takes place, from three shifts production to one shift production. Company will discontinue with investment till situation becomes better. Sales management will seek for new customers, probably even for small customers that not seemed attractive for company earlier. The whole process must be also supported by stopping or cutting down the

expenditures without which company can survive for a while for example employee's trainings, or language lessons and so one.

New use of ovens and boilers

When new type of technology enters the market, which will need modified thermostat or even security cutout and demand will increase fast CZ Eika can develop the modifications of own product to gain new customers or markets. Time for development here is needed so regular scanning here can introduce new trend and CZ Eika can have enough time to work on a product. Or even expand the production.

Increase of energy prices

If energy prices increase, people will seek for products that help them to save money, so they change their preferences from electric ovens for gas-based ovens. In that case company should provide elastic reaction in making little changes in production and produce capillary thermostats suitable for gas ovens. Investment for this change would not be high. So, company then can produce both types of thermostat and gain even more customers.

8.6 Acting

Our acting phase should start with summarization of results and preparation for presentation of outcomes to headquarters of CZ Eika. Firstly, I start with presentation of baseline and alternative futures description. Then I will present preferable future and vision to entice people. I will outline benefits that reaching of preferable future can bring, these are higher profit, more flexibility, ensuring competitiveness, better position on the market, support in decision making and so one. Next issue to present is plan. I will present plan, the bridge from vision to action. I will show the way how company can reach the preferable future. Then discussion must take place and agree on concepts. The process of agreement can long, however, after specification it is time to present agreed conclusions to a wider awareness of company. That means, another presentation for management and ordinary employees must be prepared and shown. Presentation will not be the same because aimed group is different. The management needs to meet goals in wider background meanwhile ordinary employees do not need to know so much detail. All this action is necessary for achieving our goal. Everyone has to know what the aim is, how they can help with achieving it and identify with efforts.

Action plan

As I already mentioned in theoretical part of this paper action plan is about concretization setting responsibilities and duties to a particular employee. So now is time for headquarters to hand out the tasks. Real people have to be involved into a process. In case of realization I would take the strategic planes from previous part and support the leaders with advice or my opinion. Task must be divided between people, employees which can influence achievement of goal. For example, logistic manager must look after sufficient safety stock, production department must ensure that the pieces for safety stock will be produced. Team work and cooperation is one of the main and basic instances to make plan become true. Unfortunately, it is not in my power to provide a specific plan since this work was not discussed with company headquarters. For the realization of the strategic plan is opinion and decision of headquarters of company crucial.

9   Recommendations

As I already mentioned in this paper company has faced in the past a lot of problems, even though CZ Eika always survived. However, situation back then was different. CZ Eika did produce a several components like heater roads, hot plates and bimetallic thermostats. Extreme situation that company met as economic crisis or loss of demand, change of customer preferences, cut products all mentioned above. Today company produce only one product and it is capillary thermostats. This fact does not put company in to a reliable or good situation. Today's world is changing even faster than it used to be. Capillary thermostat is uncertainty so preparation for the future is right now very crucial for company survival. I think foresight or foresight methods are very suitable and useful tool for preparation. Maybe if the company had practiced foresight in the past, it would have not bought new expensive line for hot plates production. Which one they had to stop, few years later and then even destroy. Foresight has a power to bring us information about the future that we need. Since, CZ Eika has not implemented any other system how to seek this information and on this research case I tried to show the advantages of this approach. In my research I outlined some weakness that must be improved to gain better position for today and for the future. I think the most important issue now is how to support production. For reaching, better production results and to become more reliable for CZ Eika customers. Production innovation should influence number of produced pieces that can be sold on new markets. Finding new markets in developing countries will be also an advantage in the future when demand for product in Europe will decrease. These steps will increase company profit. With more money company can invest to the development of another product. Which also improve firm position and give it a more power to survive during crisis. Another benefit may be reaching more or also even new customers with wider portfolio. Time never stops, so one – off action will not provide us success for ever. Another thing which I want to recommend is implementing of regular monitoring and scanning of market and the future. Since company is not so big, I think external foresight person can be sufficient to provide this service. With involvement of sales managers it will be easier to find signals. Another possibility is to start negotiation with parental company about possible future establishment of production lines for electronic thermostats in CZ Eika. This relates to one of the weaknesses that are between the parental company and CZ Eika and it is their support. I think more communication, setting goals between companies can help to improve situation. Eika S. COOP is one of main company stakeholders and so the flow of information has work properly. Therefore, here is another advantage of Foresight, which can help to enthuse parental company to support CZ Eika in future actions. Be honest, Eika Spain has power to decide if CZ Eika will continue or close their doors. In my opinion, Vision supported by great enthusiasm for work can be one of convincing factors. Anyway, if we go behind the time horizon of 10 years, company with production of safety thermostat and electronic thermostat can then sell or outsource production of capillary thermostat near to market in

developing countries where older technology will be still demanded. So main thought is not rest on laurels and influence your future!

10 Conclusion

One of goals of this paper was to introduce concept Foresight. In my everyday life I have to do that a lot, which refers to how much is foresight expanded in people's awareness in the Czech Republic. So, there was no wonder that company was CZ Eika, s.r.o. was not familiar with this concept too. Based on people's reactions I would say the concept still rises suspicion and sounds a little bit abstract. In my opinion, people believe more history than future. Anyway, I am sure that with wider spread of foresight this issue disappears.

In the theoretical part of the thesis I introduce foresight from its beginnings in 20th Century. Then I describe its approaches methods and terminology. I outlined how the foresight can be used in corporate environment. As a next step I focused on where we can find foresight and what is the situation with this concept in the Czech Republic.

In next phase I chose foresight framework introduced by University of Houston as a method which I want to implement to a concrete example of company. I gradually went through all the steps that this framework contents. These steps are framing, scanning, forecasting, visioning, planning and acting. I tried to highlight how each phase should look like, what is its purpose and what result should emerge. This effort was aimed to describe what is needed and was also a guide how to proceed during implementation process.

My objective of practical part was the implementation of the concept itself on concrete example of company. Chosen company was in that case company CZ Eika, s.r.o. which is located in Prostějov industry zone and is focused on production on capillary thermostats for ovens and boilers. I chose this company because I worked there for several years. As a result, I think my knowledge of this company is wider and so I thought I can bring new findings. Company met this term for a first time, yet there were no future oriented strategies. In the past, the company just followed regulations and plans from parental company. During my process of implementation, firstly I focused on studying internal documents and interviews with company employees. In scanning action, I used several analyses -SWOT, Porters five forces and STEEP to find signals or drivers of change. This step helped me to understand and know company's environment and with five forces and STEEP analysis I tried to see CZ Eika in wider context. In forecasting phase I tried to extrapolate my findings and trends and introduce baseline and alternative futures in scenario method. In visioning part my aim was build company's vision and shape of preferred future. So, define position when company would like to be in the future. Then I focused on building a bridge from vision to action, therefore I worked on company's plans and strategies. I tried to ask questions such as how can we reach our goal? In last step acting I was trying to give the company imagine of

action. So, they know what actions they should do, because this step is mainly about a company and practice. Action is about presenting result and discussion with headquarters which I unfortunately cannot provide.

After finishing process, I tried to highlight the most important things to do and show options that company has. So, in last part I summarize my findings into a final recommendation.

Reflection and suggestions

What appreciate is output itself. I think on this example is well or nicely visible that doing foresight is advantage. Final recommendation cover options that company has and suggest choices that must be made. It shows company in wider perspective and is a good help with decision making. I am very glad that I had opportunity to demonstrate benefits of foresight.

On the other hand, I did my research and implementation by myself and I think only one head is a limitation. I used methods of interviews and asked some of my colleagues to help me with analysis or gathering information. It was very helpful and bring more ideas or outputs. Anyway, this effort made by team may bring more. More heads and more opinions or discussion can bring more outputs. Another limitation is time that I could spent interviewing or cooperation with company's management. But all mentioned issues I think will not happen if company will really want to implement foresight.

Since company is not its own master always will depend on decision of parental company in Spain. Anyway, this research can serve as example of what CZ Eika can achieve and provide in the future. Or can serve as basic for another research. My final recommendation or idea is to take advantage of today's situation and try to establish cooperation with near Palacký University in Olomouc, which runs study program Foresight for environment and development.Cooperation can bring advantages to the company by providing corporate foresight and University can benefit from practical teaching of own students. During fulfillment task, students led by teachers would practice corporate foresight. Which would make foresight more popular in the Czech Republic, students would gain valuable experience and find it easier to apply after school, the university would gain more students and companies were prepared for the future.

11 Literature list

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12 List of pictures

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