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USE OF MIND MAPS IN BUSINESS

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Abstract

Mind mapping is a method that has transformed from a humble concept into one of the buzzwords of our time. It has been used by many business people all around the world, yet there are still quite a few managers that have never heard of this technique. Supported by long history and profound research, mind maps are proved to depict the thinking process of human brain. Flexibility, simplicity, understandability and creativeness are the typical characteristics. In the competitive and quickly developing environment, these are also the features that can create a difference and bring businesses the competitive advantage. Not surprisingly, the use of mind maps in business has become popular.

This paper gives a brief overview of the concept´s origin, followed by the examination of individual business practices. Strategy planning, project management, presentations, and many more managerial activities can be enhanced by combining traditional management style with alternative approach of mind mapping.

In order to provide a complex, critical analysis of the topic, the second part of the work focuses on real-life examples and experience of qualified professionals. I have accomplished a survey outlining the benefits of mind mapping and tried the mind maps personally during drawing up the thesis. Therefore I believe that the view from different angles will shed light on possible advantages and disadvantages of the practice.

1. Introduction

Mind Map as a concept has been known for ages and has been used for strategic and creative thinking. It is being used largely these days by highly successful people and companies. In today's form it has been developed by UK researcher Tony Buzan and his definition of this useful tool is following:

"The Mind Map is an expression of Radiant Thinking and is therefore a natural function of the human mind. It is a powerful graphic technique which provides a universal key to unlocking the potential of the brain. It harnesses the full range of cortical skills – word, image, number, logic, rhythm, color and spatial awareness – in a single, uniquely powerful manner. The Mind Map can be applied to every aspect of life where improved learning and clearer thinking will enhance human performance." (Buzan 42)

Managing business in current challenging environment requires combination of both, art and a science. Mind map is a framework combining creativity with analytical skills; therefore the link between business and mind maps suggests itself. The fact that mind maps have become really powerful tool used in many aspects of life by many people all around the world is supported by one of the most reputable businessman in the world. Bill Gates once said the following about mind mapping:

"Most of us now live in an 'information democracy'—if you have access to a PC and the Internet, you can tap into almost all the information that is publicly available worldwide. Advanced software and Web services can help trace, slice and dice the information in ways that were impossible only a decade ago. But while we've gone a long way toward optimizing how we use information, we haven't yet done the same for knowledge.(....)

(..)a new generation of 'mind-mapping' software can also be used as a digital 'blank slate' to help connect and synthesize ideas and data—and ultimately create new knowledge."

(Gates)

Bill Gates as well as many others realize what is the world coming to and how has the human evolution progressed so far. From agricultural and later industrial era we have been through information age and age of knowledge to finally come to the intelligence age. The infinite amount of data that surrounds us needs to be turned into something new, more valuable, original, meaningful. Current business environment is evolving faster than ever before and thus adaptability, efficiency, innovativeness are the survival factors. These challenges are usually carried on managers´ shoulders, as their role is to lead, supervise, mentor and motivate others. There is no wonder that many successful business people recommend mind maps as a very powerful tool that helps to manage and better organize the overload of information. But let's have a look at the concept from the very beginning to discover this acclaimed tool and to develop a personal opinion about its usefulness.

1.1 How does the brain works

Human brain is one of the most complex organs in nature. Before our century when actually the communication structure of neurons transmitting a signal from one to another was described, many philosophers and scientists pursued their research to find out how the perceptions, thoughts and feelings emerge and how they could be explained. One of the first thinkers who explained neural networks was American philosopher and psychologist William James. He defended a position that brain is not constructed to think abstractly but is constructed to ensure survival in evolution. (Mainzer 137)

Supporting this Mainzer adds: *"Complexity and nonlinearity are prominent features in the evolution of matter, life and human society. Even our mind seems to be governed by the nonlinear dynamics of the complex networks in our brain."* (XIII)

Brain organization seems to be very poor at doing arithmetic and formal logic. But the ability to form concepts and associations, to make good guesses and to assume hypotheses is a characteristic feature of the brain. (Mainzer 137)

Even though not all the mysteries seem to be removed yet, we have learned a lot about this fantastic source of thoughts, emotions and memories. There is no need to explain how complex the whole neural system is. There are at least ten billion nerve cells in the human brain and every single neuron could be described as sophisticated electrochemical device. Each device is equipped with dendrites through which it receives incoming signals from hundreds or thousands of other neurons. The inputs from other cells are integrated and consequently generated into outputs that are consequently transmitted further. We can imagine it as a network of infinitely many associations that goes in all directions. The whole process is completed in a matter of nanosecond. All the transfers create biochemical and electromagnetic tracks that are all together called "memory traces", the field of study for many researchers and the foundation for mind mapping.

1.2 Origins of mind maps

It has been proved that people do not think in linear or sequential way but human mind is characterized by radiant thinking. Our thoughts expand in multiple directions and creates number of associations that once become new starting points for other connections and the process goes on and on. That is what Mind Maps are all about – they mirror the thinking

process, it is a graphical presentation of all our thoughts of the subject in question. From this point of view, the concept sounds familiar. Brainstorming, note taking, visual thinking, and all these techniques are based on the same principle which has been used for centuries. Leonardo da Vinci, whose preserved note books show not yet formalized, not theoretically applied but the fundamental principles of mind mapping, or Charles Darwin is by some scientists considered as one of the first users of mind maps as they both use similar approach in note taking.

Other name associated with mind mapping is Dr. Allan M. Collins, cognitive scientist who was concerned with creativity, graphical thinking and learning. Together with his colleague Ross Quillian, they elaborated on so called semantic networks, where the main idea is to relate concepts with ideas by semantic links. This framework was the first largely used method for learning and the basis for mind maps we use today. The form of mind mapping we use today originated in the 1960s when a few psychologists gathered to do some research not about how to learn faster and better, but rather on the processes our brains go through to learn. That's when they learned how our brain needs both its creative and logical sides to work together for optimal learning. Later, Tony Buzan, British psychologist and educational consultant who dedicated his life work to mnemonic devices, worked out the whole concept in details and registered the name Mind Maps as a trade mark of Buzan Company. As Tony Buzan admits, the study of different subjects and different geniuses led his motivation to dive deeper into the subject. He found fascinating the fact how all the pieces of his discoveries fit together. Neurophysiology for example, clearly illustrates the basic principle of mind mappings by depicting the brain cells, which form the same structure as resulting mind map. I think few words about the inventor and copyright holder are pertinent here.

Full name Anthony Peter Buzan, born in 1942, is popular English psychology author, educational consultant, speaker and also a founder and president of the Brain Foundation, Brain Trust Charity, the World Memory Championships and the World Championships of the Brain. Dedicated to the study and research about human´s brain and memory and mnemonic devices, he broadcasted for BBC series called "*Use Your Head*" and later published his ideas and research results in numerous books. He elaborated and developed the mind mapping techniques, launched his own software program iMindMap and claimed trademarks on the phrase Mind Maps. He certainly has many successes and achievements to his credit, from which I can mention the less known yet more important for the purpose of the thesis – he has been international business consultant to major multinational corporations, namely: BP, Barclays Int., General Motors, Walt Disney, Oracle, Microsoft, HSBC, British Telecom, IBM, and British Airways. In addition to this he worked for governments and government organizations including England, Singapore, Mexico, Australia, Gulf States and Liechtenstein as an advisor.

From linear to non-linear thinking

Linear note taking

What we were all most probably taught at school during lectures or when taking notes from reading is to take down information line by line as it is spoken or read. Using headings and bullets to structure information or highlight words to stress the importance are typical for linear note taking practice. A typical structure would look as follows:

I. First main topic
- *A. Subtopic*
  - *1. Detail*
  - *2. Detail*
- *B. Subtopic*

II. Second main topic

This method works effectively for most people, but the structure also brings many constraints. Considering the written form, which is still largely present at schools nowadays, it is often difficult to insert some more information in between the lines. But the major difference between note-taking methods lies in their focus. Linear notes rely on pre-established structures and taking them requires more rational thinking. On contrary the non-linear note taking method (like mind mapping) allows for creative and logical thinking to meet and work together. In the case of linear method, the amount of information and ideas can be restrictive. The greater the amount of information and ideas, the more confusing and complex the traditional linear outlines become. Think of brainstorming. What method do we usually use to gather large amount of ideas in teams?

Non-linear note taking

The theory of nonlinear complex systems has become a successful problem solving approach in the natural sciences. Recently, we slowly but surely realize that all the main problems of mankind are global, complex, nonlinear and often random too. Linear thinking and the belief that the whole is only the sum of its parts are evidently obsolete. One of the most exciting topics of present scientific and public interest is the idea that even our mind is governed by the nonlinear dynamics of complex systems. *(Mainzer 1)*

Analytical thinking versus creativity

Studies and researches of human brain often distinguish left and right hemisphere. Logical and analytical thinking is usually assigned to left hemisphere whereas the intuition and creativity is supposed to be processed by the right hemisphere. This strict division might explain some of the processes but recently as we are getting to know more and more about

our minds, the view has many opponents. However, the simple explanations of left and/or right brain activities has normally been the result of inconclusive stimuli being given to subjects who are asked to respond to it. The readings may be just simple perception or a simple response. The researchers studied how the hemispheres respond to incoming information. There is actually a lot more going on when one has a hunch about an unsolved problem, or the answer to a nagging problem hits you by surprise. What comes together at the intuitive moment most probably has been contributed by both cortical hemispheres, and probably by areas of the brain outside the cortex as well.

As John Adair claims in his publication "*The art of creative thinking*" both hemispheres are active and contribute to the creative thinking so the division stays apart. What he stresses out as important is the structure of effective thinking. He divides the thinking process into 3 important functions:

- *Analyzing* – go into details, taking apart the object of thought into basic elements
- *Synthetizing* – associating individual elements into units, creating concepts, general ideas and theories
- *Valuation* – assigning the value in comparison to other things (72)

What Adair further studies is the creativity of our minds. Using the citation more than 200 years old by German poet Johann Schiller, he criticizes one particular mistake that many of us tend to make:

"*In the case of the creative mind, it seems to me it is as if the intellect has withdrawn its guards from the gates; ideas rush in pell-mell and only then does it review and examine the multitude. You worthy critics, or whatever you may call yourselves, are ashamed or afraid*

of the momentary and passing madness found in all real creators…Hence your complaints of unfruitfulness – you reject too soon and discriminate too severely." (Johann Schiller)

The lesson we should draw from this extract is that we should not control our thoughts, draw conclusions and evaluate our incomplete ideas. Rather, let all your thought come to your mind, put them down with help of mind maps and only after then you can critically evaluate all of your conceptions. (*Adair 93*)

There is no need to point out the importance of creativity and innovation in any aspect of our lives. Hundreds of publications have been devoted to this topic. Important is to realize, that creativity and innovation does not necessarily mean conjure something completely new from nothing. The idea of innovation and creativity lies in valuable combination of thoughts or things. This idea is illustrated by saying: "*The most original is the one who draws from the largest number of sources*"; "E*verything has been thought of before, but the difficulty is to think of it again.*" by Johann Wolfgang von Goethe.

All the aspects of creative thinking apply to all different fields. Concentrating on business we might say this applies twice as much.

In the book "*Creative Thinking and Problem solving*" John Fabian elaborates different methods and strategies enhancing creativity and decision-making process. As a very important starting point, he considers mind mapping as a good strategy to use for tapping intuition. Let me stop for a while and say few words about lastly mentioned – *Intuition.*

All successful executives use their intuition and its importance in management and business has been constantly growing. Steve Jobs based his career on it, Bill Gates uses it

too. Often considered as something mystical, paranormal or so called “sixth sense”, scientist have already agreed on what this “gut feeling” or a “hunch” actually is.

It is a form of thinking that is non-conscious - you know things, but you don't know why. Intuitive judgments are connected to our feelings rather than analytical minds. However, we cannot completely separate intuition from rational thinking. We start to analyze something, but suddenly due to a spontaneous hunch we end up at another track. John Fabian refers to Goldberg´s “*The Intuitive Edge*”, one of the first books covering this topic from a broad perspective. Goldberg says that despite our rational-empirical training for processing information and making decisions, we often jump to conclusions, and are oftentimes more right than wrong, using our intuition. While deduction follows the rules of logic, intuitive insights can spark an inductive process drawing conclusions from a limited set of observations. (*Fabian 137*)

We get back to John Fabian and his proposition of mind mapping as effective problem-solving strategy. To give an overview of other similar methods, I will use his summary of different thinking strategy formats that are most commonly encountered. Other “clustering” methods are the following:

Summary of 6 Creative Thinking Strategy Formats:

Brainstorming: Making ideas visible as they come to mind. Traditionally given verbally in a group and recorded on newsprint by a scribe. Sound, quick, potent if storming rules are honored. Can be curtailed if strong person dominates. Can be done solo. Enhanced when symbols, images, metaphors are used.

Brainwriting: Eliciting ideas without group discussion. Participants write or draw thoughts on a form with rows of boxes. Papers are switched when a row is finished. Storming rules are still important, especially piggybacking and bold thinking. Good for keeping individual ideas, flowing, nontalkers contributing. Some extroverts miss the verbal stimulation.

Mindmapping: Capturing ideas in nonlinear fashion. Thoughts branch outward from a trigger word, each though moving from central themes to sub-elements. Branches grow as intuition makes new connections. Can be blunted when thoughts are prejudged.

Analogy Storm: Searching for analogies that give insights into characteristics of a current or desired condition. The problem is left alone for a while to follow a series of analogies, potentially leading to fresh or novel viewpoints and solutions. In its full form, the technique needs a facilitation to guide the process. Takes an
ability to play with rational media.

Picture Tour: Using pictures as stimuli to break mind-sets. Characteristics of pictures are identified, and then used as bridges to shape solutions. Requires and appreciation of the visual and the force fitting of neutral elements of pictures into solution possibilities.

Imaging the Future: Conjuring up mental images full of future potential. List exciting outcomes you visualize happening at some designated future time period. Those who can only brainstorm rather than have fun creating mental images can still find this method fruitful.

(*Fabian 170*)

Many people take to mind mapping straight away and use different schemes without even being aware of such a concept, others need to work on trusting their imagination and their ability to freely associate more openly. Free associations do not work well from a hard focus. Therefore you need to allow yourself to be relaxed, open, focusing softly and do not filter or judge your ideas. So how should we control our thoughts and ideas without restricting our mind and be able to take down everything important from our thinking process?

2. Theoretical approach to mind mapping

2.1 Principles and individual steps in Mind mapping

A mind map is a "whole brain" note-taking method that consists of indicating a central topic at the middle of a page along with a central image, and then attaching sub-branches to this main topic that also contains key words and images. By combining images and words, a mind map forces the brain to use both our right and left sides in learning and understanding new material. To explain in details what mind mapping is actually about, how to effectively use the technique and what some common practices you should take or avoid are, I am going to use solely the Buzan´s approach. The following instructions are only a theoretical guideline Buzan proposes in "*The Mind Map Book*" and every aspect is subject to personal adjustment.

- Start in the center with an image of the topic. The image is essential to kick off your thinking and prompt the imagination.
- Draw first main branch from the center image. All the branches should be represented by wavy lines as these are easier for the brain to work with.
- Adding as many main branches as necessary, you should distinguish among your main tracks by coloring the branches. Use your creativity.
- Give each branch a name, using only one single key word related to the topic. Even though you might tend to use phrases, it is important to limit yourself only to one word. The reason is that phrases or sentences confuse human mind while aptly depicting the core facilitates memorizing of the associations. However, this is perhaps the most disputable issue of the guidelines. What you are mapping and why you are mapping, both affect critically whether this guideline should be followed or

not. If you are using it to be creative the one word policy is clearly the best as it keeps your options open for subsequent branches. If you are using the map to communicate a concept the single words become confusing i.e. in those circumstances short "key" phrases are acceptable.

- Once you are done with the first level branches, let your thoughts freely pass and continue in the same manner with second level and further.
- Key aspect of mind maps is creation of associations. Therefore to successfully accomplish this, you can for example add branches answering the Who, What, When, Why and How questions.
- As already discussed, images play an important role for our memory. Therefore for your personal benefit let your imagination run riot and draw as many pictures as seems appropriate for you.

To point out, following are the most important principles that should be taken into consideration when creating a mind map:

- Use images, symbols, codes and dimensions throughout your Mind Map.
- Select key words and print using upper or lower case letters.
- Each word/image must be alone and sitting on its own line.
- The lines must be connected, starting from the central image. The central lines are thicker, organic and flowing, becoming thinner as they radiate out from the center.
- Make the lines the same length as the word/image.
- Use colors – your own code – throughout the Mind Map.
- Develop your own personal style of Mind Mapping.
- Use emphasis and show associations in your Mind Map.

- Keep the Mind Map clear by using radial hierarchy, numerical order or outlines to embrace your branches.

Now, we got through the process of creations, let us move on to the practical use of Mind Maps in Business.

2.2 Strategic planning with Mind Maps

Strategic planning is necessary and it forms the foundation for any business plans. Its benefits include accountability to shareholders, investors and owners, decision-making, measuring of performance, and lots more. The word strategy comes from ancient Greek "*stratagan*" and it was designation for military actions. Military strategies, principles, procedures and philosophy can be applied even after centuries in business to implement business strategy. Reaching company´s goals might be viewed as permanent war between the company and its competitors, as well as its suppliers, customers, potential competitors or substitute's providers. No wonder that executives look up to important generals from the past. It is necessary to point out that many of generals from the Second World War took managerial posts in big corporations after the wars; among others the commander-in-chief of the West front – Eisenhover became the president of USA. (*Zuzák 33*)

Role of military strategist with business strategists certainly overlaps in many aspects and the highly competitive business environment of the third millennium faces current managers with comparable challenges. The competition, globalization, discontinuity, instability of markets and other today´s factors burden managers with responsibility for the long-term prosperousness as well as accountability to all the stakeholders. What should a successful manager-strategist be and be able to do?

Globalization constantly raises complexity which requires the need for global decision making and the choice of compromises. To manage the complexity managers need to be good analysts and at the same time be able to reduce the complexity by seeing the whole picture and being aware of number of different factors and influences. Fast technological developments, growing volume of information, changing life style and public demand force business leaders to react quickly, have a good sense of direction and moreover be able to motivate fellow workers. They seem to get into conflict of interest as they have to follow the goals and interests of shareholders but at the same time act responsively to all the stakeholders. There are many other contrary factors and paradoxes they have to face.

The change and the stability, logic and creativity at the same time, think and act globally as well as locally and many more. How to do all this and become a great big picture thinker? Mind mapping is a great way to conceptualize, refine, compile, organize and share strategic-level ideas generated from brainstorming and other creative exercises.

Mind maps are ideal tool to be used along with popular strategy designing techniques. There are numerous tools used to draft business strategy. Following is the list summarizing most commonly used methods and suggested application of mind mapping;

PEST Analysis

PEST analysis, sometimes referred also as PESTLE examines the external macro-environment factors that have impact on the business environment in which an organization operates. It gives an in-depth view of the environmental factors as below:

- Political: These are governmental regulations and policies that influence the economy and may have a certain impact on the company. Political factors include tax policies, trade agreements, fiscal policies, political stability and similar to those.
- Economic: Determinants of economy´s performance. These factors impacts mainly the cost of capital and purchasing power of a company. It includes economic indicators such as interest rates, inflation, foreign exchange rates, and economic growth.
- Social: Factors reviewing the social environment of the market, consumers´ needs and therefore potential markets or their growth. Example of these is demography, population growth, social mobility, life expectancy, level of health care, cultural trends and so on.
- Technological: Innovation in technology and rapid development largely affects business operations and keeping up with the times is a survival need. Important decisions about R&D spending or the rate of technological change are based on a thorough analysis of the technological trends.

Additional factors that are sometimes included in the above mentioned PEST factors but the increasing tendency is to state them individually are:

- Legal: Both external and internal laws that affect the business operations are analyzed in order to be reflected in the strategy planning. Consumer laws, safety standards or internal company policies are some of the examined factors.
- Environmental: The importance of environmental factors analysis largely depends on type of industry. In appropriate fields of business it is crucial to have a look at the environmental aspects such as climate change, geographical location or weather which have a significant influence on the business operations.

Drawing up a valuable PEST analysis requires brainstorming and further research of individual factors. Using standardized templates managers usually summarize the outcomes in bullet points, categorized in the 4 or 6 sectors. Creating a mind map with PEST analysis facilitates putting all these factors in the context, enables to see the connections between individual factors and moreover offers clearer summary. The PEST analysis mind map is very simple to grasp, the central image connects the 4 or 6 main branches (PEST-LE) which further branch into individual factors. Different highlights or images allow differentiation according to the importance or level of impact.

Illustration of PEST analysis in form of Mind map

(*Source: Educe.org*)

Complementary to the PESTLE analysis is the SWOT analysis, which in addition to external macroeconomic factors includes internal strengths and weaknesses of the company. PEST factors are classified as opportunities or threats in a SWOT analysis.

SWOT Analysis

Simple but most widely used tool for strategic planning is SWOT analysis, which gives a clear picture of the company´s current state. It helps in understanding the strengths, weaknesses, opportunities and threats involved in a project or business activity.

Typical 2x2 matrixes which summarize the characteristics may be replaced by a mind map that can capture more information in a compact space.

The central idea consists of four areas of inquiry, represented by four main branches – Strengths, Weaknesses, Opportunities and Threats. Sub-topics coming out of the main branches capture the current situation of the company using single key words or collocations. These may be further developed or connected among each other as usually the opposite factors overlap (a strength may be a weakness in a particular situation, as well as threats and opportunities may be interchangeable). In short, this map communicates a wealth of information with a high degree of clarity.

(*Source: Educe.org*)

Porter´s Five forces model

Porter's five forces model of competitive position analysis evaluates the competitive strength and position of a business. Michael E. Porter of Harvard Business School proposed a framework of five forces determining the competitive positioning in the market.

The five forces are:

1. Supplier power: Evaluating the bargaining power of suppliers of raw materials, components, labor, and services. Number of suppliers, their size and possibility for substitution are the driving elements.

2. Buyer power – Bargaining power of the customers, driven by the size of the market, the importance of individual buyers, switching costs etc. The fewer buyers a company has, the more powerful they in terms of price setting.

3. Competitive rivalry. The key driver is the number and capability of competitors in the market. Many competitors, offering undifferentiated products and services, will reduce market attractiveness.

4. Threat of substitute products or services. Where close substitute products exist in a market, it increases the likelihood of customers switching to alternatives in response to price increases.

5. Threat of new entrants. Profitable markets attract new entrants, which eventually decreases the profitability. Influencing factors are barriers to entry such as patents, different policies or capital requirements, economies of scale.

By identifying where the power lies, the company is able to anticipate new opportunities or threats. With help of all the information managers can develop a solid, profitable business

plan that would maintain the competitive advantage of the business. Even though the traditional linear scheme of the Porter´s model already gives the impression of a simple mind map, giving it a non-linear structure stimulates our brain to “think out of the box”.

Traditional Diagram of Porter´s Five Forces Model

Mind maps can be applied in the same way to the next strategic tool, which is very similar to the Porter´s model, but only gives a view from a different perspective.

Balanced Scorecard

Originated by Robert Kaplan and David Norton, this strategic tool attempts to measure and provide feedback to organizations in order to assist in implementing strategies and objectives. It analyses the business from 4 perspectives:

Learning and growth

Rapid growth and technological development pressures employees to be in continuous learning mode. This perspective analyzes employee training and corporate cultural attitudes related to individual and corporate self-improvement.

Business processes

Measures of the internal business processes allow the control of how well the business is running and whether it conforms its mission.

Customers

In any business today, we realize the importance of customer focus and satisfaction. Therefore constant measurement of the performance from this perspective is leading indicator of any business.

Finance

Financial data is usually the most commonly processed set of data in every company. In this perspective we should not omit additional financial-related data, such as risk assessment or cost-benefit.

Example of traditional diagram compared to personally designed Balance Score Card mind map, Mindjet software.

(Source: balancedscorecardreview.com)

BCG Analysis

BCG Matrix is very strong tool in itself and when being created in the form of mind map its efficiency boosts. Also known as growth-share matrix, the targets of analysis are business units or product lines. According to this matrix, business could be classified as high or low according to their industry growth rate and relative market share. Related market share and industry growth rates provide us with a comparative analysis of business potential and the evaluation of environment, which helps the company allocate resources and shape the strategy.

Contrast of BCG Matrix in traditional form and as a Mind Map.

(Source: Biggerplate.com)

McKinsey 7S framework

For an organization to perform well, 7 elements categorized as either “hard” or “soft” need to be coordinated. The elements that management has a direct control of are hard elements and they include the Strategy, Structure and Systems the company uses. Soft elements are less tangible however with the same level of importance. Shared Values, Skills, Style of leadership and Staff refer more to the corporate overall culture.

To successfully implement any type of change, it is essential to understand the interrelation of all the elements in order to coordinate the impact of the changes. The 7S framework servers best the examining the positioning of the company and finding its internal strengths and weaknesses.

Other tools for business strategy:

So many important matters can compete for your attention in business that it's often difficult to see the "wood for the trees". In addition to the above explained common tools for strategic planning I could extend the list with Marketing 4P Strategies, Product Life Cycle, Porter´s Value Chain or Critical Success Factors (CSFs) – all very popular and broadly used tactics how to evaluate the present and set the direction for the future of your business. What all these methods have also in common is the applicability of mind maps. The reasons why one can give preference to more creative, non-linear records of the research and company evaluations are the following:

- Usually businessmen are seen engrossed in immediate issues, thus forgetting the ultimate goals. By its facility of content filtering, mind mapping software enables remembering of priorities. You can easily identify the short and long term priorities, while branches can be later expanded to concrete strategies.
- Mind map is also flexible to use. You can add new information or make necessary corrections when it comes.
- Mind mapping software is colorful, memorable, and lucid. It also suits every demand, either a rational person or a creative mind. Being interesting, it engages everyone's attention, thus increasing group work.

(*Hubpages.com*)

Forecasting, Scenario Planning

Environmental scanning techniques and previously discussed strategic tools provide a solid overview of current situation and trends. However a managers´ task is to accurately predict the further development of these trends. Future forecasts are based on set of assumptions that are hardly approvable because the intuition and luck play the key role in the

predictions. The role of intuition has been previously discussed, therefore now I will have a look at different forecasting techniques that are just right for the mind mapping.

David Hunger and Thomas Wheelen in their book "*Essentials of Strategic Management*" list the following most popular forecasting techniques:

Extrapolation – extension of present trends into the future. The main problem with the extrapolation is that it rests on the assumption that the world changes slowly in the short time. Today, I would argue that the opposite is true. The more precise prediction is needed the further one has to go into the past to search relevant data. As opposed to the quantitative techniques such as statistical modeling mind maps are relevant tool for extrapolation. Still managers might find better use of non-linear brainstorming method while designing the scenarios. Scenario planning is the most widely used technique after extrapolation. Combining the previously gathered data on the present situation with the forecasted developments creates several scenarios that the business is most likely to face in the near future. Mind maps contribute as a useful brainstorming tool that helps to organize the large amount of ideas or even further boost the creativity in simulating the future situations.

Strategic planning identifies the goals of a company and sets the overall direction for the business. The desired outcome of the strategic management is the determined mission, vision, values, goals, and overall business objectives. Though to manage the individual goals, business needs strategic management as well as project management. Even if both types of management share planning and control characteristics, they differ in some details in implementation or execution. Project management takes one of the goals and manages costs, schedules and resources to give the desired result.

2.2 Project management with mind maps

*"I have to have order or it just doesn't work for me. And the Mind Map is one of the tools that I use. When it comes to defining or creating something, Mind Maps give me a head start."*Quote by Sam Brooks, Design Engineer at Boeing voices opinion of many project managers who use mind maps in their everyday work.

Project management is a multitasking activity that requires not only lot of creativity, patience and organizational skills, but detailed documentation and control over the whole plan is one of the keys to success. Loads of forms and documents that are filled for individual tasks should not become an obstacle or cause confusion but quite the opposite. Project managers need tools that help them to keep up with everything and that give them clearly arranged overview of all the necessities. Over many years lot of sophisticated computer-based project management tools have evolved and nowadays managers have a huge variety of choice.

I will talk about differences in mind mapping software later; first have a look at the main reasons why mind maps, either in electronic or paper form, are ideally suited as a project management tool.

Mind maps are visually orientated and allow for the gathering, management and sharing of a lot of information. Different associations clearly depict relationships between individual actions which helps resource allocation, task status or priorities assignment etc. There are 2 most commonly applied project management methodologies. Although the methods are purely theoretical guidelines and there can always be an own, specific methodology of the

organization, I am going to shortly introduce the following two and focus on the mind mapping opportunities.

Traditional Approach

Traditional approach divides the project in 5 steps executed in sequences. The processes are as listed:

- initiation
- planning and design
- execution and construction
- monitoring and controlling systems
- completion

PRINCE 2 (PRojects IN Controlled Environments)

PRINCE2 is process-based method used for the management of all types of projects, standardized practice in the UK but used worldwide. The key features of PRINCE2 are focus on business justification, defined organization structure for the project management team, product-based planning approach, emphasis on dividing the project into manageable and controllable stages and flexibility that can be applied at a level appropriate to the project. (*Prince2.com*)

Both approaches use slightly different terminology and differ in certain procedures, but there is something they both have in common – the project is divided and delivered in stages. Thinking in terms of individual steps or stages helps project managers to execute

control over the project´s process and make sure that the deliverables meet their purpose at the end of each step so that the subsequent action can be launched. For that purpose the Work Breakdown Structure (WBS) form is drafted. Traditional WBS looks like a flowchart, connecting key objectives with related tasks required to reach the goals. The form of WBS itself suggests the use of mind maps instead of linear, static form. Substituting the old structure by more organic, non-linear graph makes it easier to read.

How exactly an efficient mind map of WBS can be created?

Brainstorm main activities that put together the whole project and let your creativity and flow of thoughts continue with the sub-branches to finally arrive to the individual tasks. The important characteristic of task is that it must be measureable, independent and have clearly defined limits. Once you have a set of all your tasks, you can allocate costs to them. Just as budget is controlled and strictly limited, projects usually have time constraints as well. Only with clearly defined time limits project managers can determine how advanced the project is and can track the tasks individually.

The most used progress chart that has become a technique for representing the phases and activities of a project´s WBS is Gantt chart. It shows the start and finish dates of the individual tasks and illustrates the dependency relationship between activities. Most of the minds mapping software provide a function that automatically generates Gantt chart for you. Besides indicating costs and time frames in the WBS, other important elements should be taken in consideration with individual tasks: Function and Responsibility. A project is successful only if it fulfills its intended purpose. This purpose consists of individual functions implemented by the task. Therefore a task is only complete when it fulfills its partial function. This is what task managers are in charge of. Project manager accounts for the project as a whole, but his obligation is to fairly assign responsibilities for the particular tasks.

Example of Project Mind Map template

(Source: MindVisualizer)

Integral parts of project management are processes that run through all the phases and need to be kept in mind by every manager. These are <u>team management, efficient communication and constant control.</u>

How important is the role of these key success factors in mind maps? How to facilitate the processes with mind maps?

2.3 Risk management

Essential part of control is to manage risks. In project management terms we talk about Triple Constraints – time, cost and scope, the three elements that are most vulnerable to various risks. Risk identification, explained as a process of determining potential project

risks, is carried out during all project´s stages. The repetitive nature of the risk identification process makes it an ideal application for mind maps. One risk may turn into other identified risks and tracking the relationships between them demands non-linear, clear structure. Furthermore, besides the initial brainstorming session for identifying risks, mind map can be used for drafting subsequent processes such as strategies, impact analysis etc. The mind maps present unique opportunity for project manager to manage risk effectively from brainstorming, relationship and prioritization to categorizing them in the time, scope and resource categories.

Example of Risk Management Mind Map taken from Mind Genius:

2.4 Team management:

Project managers are taking the challenge of managing cross-functional teams. Team usually consists of members from different departments or fields and additionally they also have to fulfill other roles besides the project responsibilities. Adaptability and willingness to accept changes are very important. But as Tony Buzan claims, some people are less

flexible and do not like adapting to new conditions. Therefore a successful leader is the one who is not only enthusiastic, full of new ideas but more importantly is able to create environment in which changes are accepted and people do not fear them that much. This comprises of:

- Working environment where people have a sense of support which allows them to grow on a personal level.
- Possibility to follow inspirational examples
- Clear and open communication
- Associating the change with attractive advantages
- Appropriate reward system.

(*Buzan 150*)

Mind maps are ideal tool for group activities, allowing involvement of all members which automatically provides the sense of cohesion and sets the ground for above mentioned working environment.

2.5 Interpersonal Communication

Follow up is an already mentioned important aspect – communication. Obvious command chain is one thing, but how to manage interpersonal communication is for some tough nut to crack. Here are some tips:

According to A.Zairis and J. Stamatis the fundamentals principles of communications they list in their book "*Total business Success*" a successful manager never forget the following:

- Words mean different things to different people
- The perception of reality differs from person to person
- Feelings influence understanding

- Opinions are not necessarily facts
- Feedback completes the message
- Actions are louder than words

Therefore to be good in interpersonal relations one must never forget to:

- Listen to the other person
- Express himself briefly and clearly
- Confirm that he/she has heard and make sure that the other person understood what one has said
- Create an environment that is conducive to effective communication.

(*Zairis 19*)

The communication does not necessarily refer only to verbal expressions, but be able to express your ideas in written form is crucial for project management as well as for any other activity. The main advantage of mind mapping lies in the simple fact that its non-linear structure is natural for human brain and that is why we end up reading it rather simply. Associations, images, different illustrations or highlights combine everything that has been previously stated as fundamental for interpersonal communications. To sum it up, a quote by Cliff Shaffran, CEO of Q3Global Company stresses all that is important;

"*We achieve far greater clarity in all our communication, develop more creative ideas faster and save volumes of time daily using Mind Maps. In essence, we get more done.*"

The quote is also an opening for the following topic – essential time management.

2.6 Time management

Setting targets, prioritizing, understanding and distinguishing between matters that are urgent or important and those that are not are the key aspects to be understood in order to successfully manage our time. In different books about successful management practices, different pieces of advice can be found. "*Total business success*", book by A. Zairis and G. Stamatis offers managers a general advice for time allocation, depending on the type of the company´s activities:

- General Planning:

  We dedicate 60% of our time to marketing and sales

  30% to production and financial issues

  10% to management issues

- Management

  We dedicate 60% of our time to planning and strategy issues

  30% to control

  10% to public relations

- Sales

  60% of our time is dedicated to retaining and expanding existing customer base

  30% to seeking new customers

  10% seeking important customer accounts towards forging closer, long-term ties

- Evaluation and development

  It is useful to dedicate 60% of the time we give to evaluation to reinforcing our company´s strong points

  30% to obtaining information and learning new things

  10% to improving our weak points (*Zairis 35*)

This is only a theoretical and very subjective proposal. More important is to avoid digressing and not get overburden by the workload. To-do lists may not be sufficient or appropriate for many reasons. The reason why mind maps serve as better tool is that they help you to depict the task from a broader perspective, monitoring the relationships among individual steps or the subsequent flow of your work. The key success factor for getting organized is to know exactly where you stand and prioritize the directions you want to move in.

2.7 Mind mapping for presentations

Presentations are important communication medium in all fields of work life. Presentations usually have more objectives: to inform, teach, motivate, or persuade. Therefore every single feature from the presenter´s appearance, attitude and mannerism to the visuals forms the first impression. Supporting your presentation with mind maps can assure you that difference and bring you the desired outcome. But first of all, let´s have a look at the general knowledge of how to create a high-impact business presentation.

4 types of Learning Styles

To reach the objectives of your presentation to the best extent you can, it is important to know your audience. David Kolb effectuated interesting research about different learning styles and he brings a list of 4 main ways of how people learn new things:

i. by experiencing something for themselves,
ii. by observing something and reflecting on what they have learned,
iii. by thinking about what they have heard,
iv. by doing things for themselves.

The challenge is to be able to appeal to all these different types of listeners.

Bernice McCarthy picked up the threads of Kolb´s work and elaborated so called 4-mat system which is currently broadly used aid for effective presentation design. As the name suggests, there are 4 sections required in your presentation to appeal the 4 types of listeners previously mentioned.

- Why?

Why listeners are people who learn by experiencing something for themselves and therefore what they are seeking in your presentation are the reasons why something is worth doing for them. *Why should I be listening to you? What's in it for me?*

That is the main argument behind the commonly used opening statements like *"In this presentation, I'll give you some tips about preparing efficient presentation using mind maps."*

- What?

"What are you going to teach me? What specifically am I going to get out of this?"

Second type of listeners wants to be taught, they are satisfied when presented a lot of information. These people want to be presented the main underlying concepts at the start of the presentation so that they can begin their process of absorbing the concepts and follow up with the presenter while taking notes.

- How?

The third type of people learns by thinking about and analyzing what they have heard, posing themselves question "How". "*How does it all work? How can I make this work? How can I try this out for myself?"* These people do not matter facts as much as practical examples.

- What if?

Similar to “how people” the last group are people who learn best from self-discovery. In addition to that, they like to dispute the stated facts while trying to figure out an original approach to things. What if suggests questions like “*What if the conditions are different? What new possibilities will this open up for me?*” Hence, the speaker might think of putting together a list of similar questions to be ready to react and satisfy the last group of listeners. The order of the 4-mat system is not random, but it reflects the optimal flow of your presentation. Even though this is only one way how to look at efficient presentations, I think that following this simple rule based on understanding your audience may largely contribute to the quality of your presentation.

Before getting to the presentation designing process with mind maps, I would like to share another useful tips and advices for successful business presentation. The book “*The New Articulate Executive: Look, Act, and Sound like a Leader*” by Toogood presents 5 important elements everyone should keep in mind:

1. Strong start

2. One theme

3. Good examples

4. Conversational language

5. Strong ending

The speaker should put himself in the role of translator as his/her responsibility number one is to “translate” all the information presented to audience. To translate effectively, you have to ask questions:

What does this really mean?

Why is this important?

What should I really be saying here?

What is the point?

Does this add anything?

Am I speaking in a language everyone can understand?

Am I using examples that fit?

Who really cares?

These questions will help you to avoid overloading your listener.

Last but not least piece of advice from Toogood´s book that is worth mentioning is the rule of four A´s. Every piece of information you are giving is usually part of a bigger story. Therefore try to think of the following four A´s:

Assemble - Bring the relevant data together.

Align - Make certain all the facts are headed in the same direction.

Apply - Explain how these facts put together, tell a story.

Assign - Go the next step and add value. That is, take the information and what it is telling you. (*Toogood 34-37*)

During the preparation of the presentation, mind maps can facilitate your brainstorming, organizing and planning your speech. Once you have your presentation mind map in front of you, it is much easier to check the flaws and improve it according to previously mentioned advice.

Powerful presentation should also be providing concrete examples, illustrations, analogies etc. As Ernest Hemingway said: "*Don't tell me about it—show it to me*." Mind maps are suggested as powerful tool for presentation not only during the preparation process, but they can also serve as a great visual aid. Unlike text or bullet lists, it depicts the flow of your presentation, keeping the complete context or structure in view but also presenting details.

3. Mind Maps in Practice

From theoretical point of view, mind maps have a large use for business. Chuck Frey, a manager dealing with innovation tools gathered data about the most popular ways of using mind maps for business activities. Evidently, presentation, project planning or strategy design belongs to favorite mind mapping practices.

Data by Chuck Frey; Mindmappingsoftware

3.1 Software

Many people make use of their creativity and enjoy creating hand written mind maps. However digitalized mind maps created by different computer programs shift the productivity and efficiency higher and offer more flexibility. We have studied different activities suited for mind mapping, looking at different mind maps illustrations. To facilitate the work with mind maps and make the process of brainstorming, recording of ideas or planning more effective, there are dozens of different software solutions for it. Free as well as standard applications or web services offer sophisticated features integrating common project management tools or other commonly used programs with mind maps in order to provide visual aid in discussing key components, tasks or risks of projects. Those who are familiar with traditional project plans will certainly welcome the function of using built-in Gantt view or other charts empowering to use the mind map for an entire project from start to finish with great efficiency. Dependencies, constraints, completion values, duration, lead/lag times, resources, priorities, critical paths, milestone and more can be managed. A project manager can easily import existing task lists from Outlook to mind mapping program and export the final mind map to Microsoft Project, Word or PowerPoint.

Unfortunately, not all software packages on the market share these powerful characteristics. Selection of the best suited program mostly depends on how you use mind maps, for what purposes. Here is the overview of the most commonly used application and their main features:

Paid software:

Buzan´s iMind Maps

The only application developed by "father of mind maps" - Tony Buzan. Using an intuitive workspace, a radiant, unrestrictive structure and lots of visual stimulation, iMindMap is the perfect tool for all thinking tasks. Brainstorming, taking notes, planning & organizing, studying, managing tasks and even delivering presentations; you can do it all simply, quickly and in one place. Mind maps created in iMindMap can be exported as PDF, JPG, PNG and text outline and the software integrates with Microsoft Office, OpenOffice.

Microsoft Visio

Part of Microsoft Office family, it can draw nearly any static diagram including block diagrams, organizational charts, maps, plans or workflows. Visio makes diagramming simple—whether you want to quickly capture a flowchart that you brainstormed on a whiteboard, map an IT network, build an organizational chart, document a business process, or draw a floor plan.

Mindjet

More than two million individuals, thousands of small businesses, and 83% of Fortune 100 companies use Mindjet to generate ideas, organize information, store and share data, and manage workflow, maximizing the power of collaboration. Mindjet enables anytime, anywhere access to maps and other files, including from your mobile device. Straightforward permission settings let you decide who can view and edit your work.

Illustration of a meeting plan designed by me with help of Mindjet:

Mind Meister

One of the important assets of MindMeister is its simplicity. You can create a fully functional mind map using little more than the directional arrows and the Insert key to add new nodes to your map. Exporting to a text outline, PDF, JPG, PNG, or GIF is taken for granted.

Mind Mapper

Software by SimTech Systems offers standardized features to create mind maps, concept maps, flow charts, organizational charts, process maps and project management tools like Gantt charts.

My own illustration of brainstorming effectuated in Mind Mapper:

Mind Genius

Business or academic version of Mind Genius is distinguished by its wide range of exports to MS Office and Adobe applications, including Word, Excel, PowerPoint, Project and PDF. Designed specifically to meet business needs, it represents an ideal assistant with common business processes from gathering ideas to managing projects.

Free software:

Wise Mapping

Free, web based application suitable for business or educational purposes. Easy sharing and embedding of your mind maps in any webpage, this software is fully compatible with FreeMind.

XMind

In addition to a basic mind maps Xminds creates Ishikawa diagrams (also called fishbone diagrams or cause-and-effect diagrams), tree diagrams, organization charts, and spreadsheets. It can be used for knowledge management, meeting minutes, task management. You can export charts as HTML, images, or text.

The same brainstorming recorded in XMind:

Freeplane

Freeplane aims for maximum ease and speed of use, allowing the user to add content as quickly and naturally as they would in a text editor, yet producing structured content that can be manipulated as easily as a diagram. Freeplane is a free, open source software application written in Java.

FreeMind

As with other mind mapping software packages, FreeMind allows the user to edit a hierarchical set of ideas around a central concept. One of FreeMind's strongest selling points is a Java-based implementation that makes the application portable across multiple platforms and retains the same user interface, causing some amount of variation from the common interface on each platform. (*Company´s webpages*)

My simplified version of previous illustrations created in FreeMind:

3.2 Case Studies

Not to speak only about figures and facts, I focused my research on success stories of businesses, which achieved a significant improvement of their results by implementing mind mapping in their management practices. Tony Buzan illustrates his book with several case studies; however to give more evidence and prove the efficiency of mind maps, I came across more interesting examples of how can mind mapping bring a beneficial change to company operations.

ABB Group

ABB Group is a world´s top engineering company specializing in power and automation technologies. The company operates globally, with divisions in 100 countries all over the world. The biggest challenge of this industry is to achieve sustainable improvement by

effective problem prevention effectuated by thorough root cause analysis. Addressing the right problems and fixing them is very time-consuming and costly activity, demanding a complex methodology to take thousands of factors into account. Nine years ago, a newly hired automation engineer Barry Kleine started to address the different methods used across the company for root cause analysis, coming to a conclusion that there are inefficiencies and cost ineffectiveness that should be dealt with. Aiming to find a more logical way of operating, he created so called “Loss Map”, using Mindjet software. Kleine´s idea was to document company´s knowledge and know-how in a clear and understandable form, breaking the mass of information down to logical and presentable framework. Recording Key Performance Indicators visually in the form of mind map allows including detailed information about them and distinguishing according to the potential of improvement. Then, at an early stage of loss review, those KPIs with the largest potential improvement are focused on, measures are compared to benchmark figures and the company can easily concentrate on the factors that deliver the fastest returns. Kleine´s Loss Map was well elaborated to serve as a global template for ABB´s root cause analysis, enabling plant managers to recognize the factors that limit the achievement of their objectives.

The flexibility and suitability of computer-based mind mapping for teamwork is supported by the fact, that the Loss Map is also used for collaboration between maintenance services provided by ABB and company´s production plants. Everyone can contribute to the map by evaluating, setting priorities, selecting elements that do not apply etc. so that a consensus is reached and any plan can be customized.

The success of this methodology was soon recognized by the management of the company, which in 2009 incorporated the Loss Map as a mandatory training for ABB management teams across the globe, in different spheres. Sales people, site managers, engineers, planners and supervisors were suggested to use this tool to determine plant strategy. The company reported improvements, claiming that the use of the map gave rise to increase overall equipment effectiveness in New Zealand´s subsidy by 22.4 per cent, reduced maintenance costs per unit by 35 per cent, and increased employee satisfaction from 66 % to 78 %. Even the other 20 countries where the ABB Loss Map has been used recorded faster gains caused by better understanding of plant issues by personnel.

Besides the corporate Loss Map, Barry Kleine uses mind maps for planning. Every time he is assigned annual work objectives by his managers, mind mapping helps him to break them down into sub-daily sections. He describes his own experience with the maps as following: "*Each day I know exactly what I need to do and sign off, track priorities and processes. Each year that I've done this I have achieved 98 per cent of my performance criteria, and it's taken less than 15 minutes to show my manager.*"

DFS Group

DFS Group is a division of the world´s leader in luxury VMH Moët Hennessy - Louis Vuitton. Headquartered in Hong Kong, DFS strives for remaining the leading luxury retailer catering to international travelers, running number of DFC Gallerias, airport shops and other stores. In 2000, the management came with the decision to restructure IT services. The challenge ahead of the company was to design, implement changes in IT department that would improve efficiency and cut the redundant resources. Cooperating with consulting group Quicksilver, the DSF IT vice-president Rick Hamilton introduced a

new management technique to run the initial planning meetings - mind mapping method. This turned to be the key success of the whole project. Hamilton explains what led to the switch from classical approach: "*Twenty people from all around the world, from different lines of business and with different reporting relationships, had three days to figure out how to meet what we call the challenge. We had to reduce overall operating costs and improve productivity, quality, speed and agility – and do it with a team representing 13 different nationalities. Five people in a row giving one hour slide presentation were not going to get IT where it needed to be fast enough. "*

The greatest contribution of using MindManager software was that it induced all the team members to interact, participate and work together on the restructuring plan. The initial collective map of strategic outcomes identifying key priorities and the areas to be focused on was elaborated only in two days. It became the cornerstone for the whole project and yet the results speak for themselves. DFS was able to dramatically accelerate the project timeline, consolidated 10 global data centers to a single facility in Singapore, the time of ongoing IT meetings reduced by 40 to 60% and the overall IT operating expense was cut by 35%.

Even long after the completion of the project, the team continues to mind map in their daily work activities. Hamilton confirms: "*We have really internalized the mapping process, and we use it all the time.*"

Q3 Global

The founder and CEO of Q3Global company – Cliff Shaffran discovered mind maps in 1993. Immediately they were being used to replace the traditional company´s meeting records. Drafting the agenda in the form of mind maps quickly gained popularity among the managers and mind mapping now form an integral part of corporate way of thinking. As Shaffran says: *"Eighty per cent of our corporate documentation and internal messaging is now in Mind Maps. We achieve far greater clarity in all our communication, develop more creative ideas faster and save volumes of time daily using Mind Maps. In essence, we get more done."*

The reason why I chose Q3Global as an illustrative example to conclude the section of case studies of effective mind mapping in global corporation is the field of its operations. Q3Global is a consulting company providing services to major international corporations in areas such as strategy development, project planning, conflict resolution or board meeting. Cliff Shaffran is well-known thought leader, speaker and author of books about group communication and running of highly effective meetings. Among his clients are globally resounding names such as Oracle, HP, Price Waterhouse Coopers, British Airways, Unilever and many others. Consequently, the mind mapping method is propagated in high level managements of global leaders.

3.3 Survey

Part of my thesis was also personal research about practical use of mind maps in business. For this purpose I have executed a survey among business people who have the experience in mindmapping and were willing to share these with me. Here are the results and highlights of my survey:

- **Field of industry, occupation and position**

I had a chance to speak with professionals from many different countries in many different fields of industry. With people who have long experience at high positions in small businesses, as well as large international corporations. Specifically I interrogated certified trainers of Mind mapping by ThinkBuzan Company who besides training and consulting services hold executive positions. Specifically: lecturer at BI Norwegian School of Management, CEO of Appulento Inc., managing director in oil industry, project manager in IT, business owner of marketing agency and many other top executives. Not to forget to mention famous Czech business man Mr. Ivan Pilný, former CEO of Microsoft Czech Republic, ex-member of the board at Czech Telecom and currently working as consultant and author of books dealing with human brain.

- **How long have these people been using mind maps?**

The time span of using mind maps was in general rather long. Even though half of these people claimed on average 3 years as the period they have been using mind maps, the other half stated more than 18 years of experience. The most extreme answer was since 1977. The most common software these people use is iMindMap, however to my surprise quite a few of them still sticks to paper versions.

- **For which activities is mind-mapping used?**

I posed this question not only to prove the usefulness of mind maps in all previously discussed spheres, but possibly to find out other activities that might be facilitated by mind maps. There is no need to repeat myself in listing the same things I elaborated in the first part of my thesis; therefore I will just point out some interesting findings.

- 3 respondents gave Photo Reading (parallel for speed reading) as an exemplary use of mind maps
- Planning and drafting extensive pieces of writing such as books or newsletters
- IT specialists use mind maps for software design as well as security assessment
- Summarizing extensive pieces of reading, lectures, or academic texts

- **What is the greatest contribution that mind maps have made to work?**

From the survey results it is clear that the main benefits of mind mapping in everyday use reflect the theory. Mind Maps are an integral part of the presentation process, because the software iMindMap allows the map to grow in front of the audience's eyes which keeps their rapt attention. More importantly, associating colors with the information listeners always remember the content better than if the presentation was done with regular PowerPoint. The ability to see the whole picture, structure the ideas and distinguish more important things from less enables to better understand, remember and communicate even complex processes. Enhancing memory and breaking barriers in thinking brings significant advantages to problem solving and innovation.

- **Success stories or special experience with mind mapping;**

Additionally, with the allowance of all the respondents I may share their success stories or special experience closely related to mind maps.

As was already mentioned, mind maps are ideal for preliminary drafts of outlines. This proves also Mr. Phil Chambers, author of many books and mind mapping instructor. Recently he has written the book "*Brilliant Speed Reading*" due to be published by Pearson in July. To create the overview of the whole book, he used Mind Map for each chapter. This formed the basis of the book which was completed with additional editing in Microsoft Word but most of the text was captured in the Mind Maps. Final manuscript was 40,000 words.

The lecturer from Norwegian business schools transmits his experience with mind mapping to his students with astonishing results. F students are becoming A students. After all one of other respondents has his personal proof of it: "*When presenting our final presentations for my Master´s Degree Program, we were required to use PowerPoint slides for an online presentation to a global audience. I was able to take a full Mind Map for each eight-week course, and copy and paste each week's branches to a PowerPoint slide. We were judged by the number of questions the audience members had for our presentation; and, because the Mind Maps activated information which the students had previously learned, my presentations always received the most inquiries."*

Similar experience has been shared by several business people. The survey clearly showed that despite the skepticism that impacts most of us, presentations prepared with help of mind maps are really powerful tools in business. The only thing it takes is to try it and see

the difference. As confirms one of the businesses consultants I inquired; *"I am rather skeptical when it comes to using methodologies for concepts, planning, brainstorming etc. I put myself to the test by planning an afternoon presentation for close friends to talk about mindmapping and only giving myself 15 minutes of preparation time. And it worked like a charm! "*

Last but not least case worth mentioning is from the former managing director of oil company. He used the mind maps for organizing thoughts and plans which led him to persuade investors and thus boost his business. His business plan presented to investors resulted in a £100m fund, which allowed the director to purchase the entire retail network of Jet petrol stations Conoco Phillips in 2000. *(Managing director of oil producing company, holder of ThinkBuzan certificate)*

4. Conclusion

Mind-maps are in general most valuable as a brainstorming, visualization and facilitation tool. It empowers all the users to share ideas, plans and concepts through an easily accessible and generally widely understandable format. Using mind mapping as a managerial tactic may increase the productivity and efficiency of work, being proved and acknowledged by many people. However there is always the other side of the coin.

The routine and practices that have been deep rooted are hard to change and not everybody is willing to accept new approach. Combining traditional practices with mind mapping for boosting creativity and inspiration seems to be the best solution.

My motivation to choose the topic was to learn and try mind mapping by myself. For the purpose of this paper I designed several illustrative examples using different mind mapping software. For my personal use, I have been developing review maps when reading a book or studying for an exam, utilizing traditional paper form of mind maps. The feature I liked the most is its remarkable form. Summary of all key factors put into the context using associations, images and colors displayed only on one page is easy to review, recall and learn. Nevertheless such a mind map serves for personal purposes only and the adjustments are limited. Drafting team mind maps or long-term changing projects requires software.

Accordingly, the future of the mind maps lays in mobile devices applications. Despite the fact that the market with mobile mind applications is spread out well, the boom in this sector might come. Maybe one day I will replace my notepad during lectures by this multipurpose powerful aid that mind maps certainly are.

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