

Water Loss 2009

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## **Mind Mapping in Water Loss analysis: personal experience**

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### **Introduction**

For successful reduction of water losses use of appropriate methodology is very important. We must develop dedicated strategy based on diagnostic approach. IWA WLTF methodology brings many universal methods and solutions that can be applied anywhere in the world. Crucial is to find a way to implement this methodology in specific conditions of some water distribution system or utility. Basic steps are; first identify the problem and its causes, then use appropriate tools to address the problem, next important step is to define strategy and finally implementation of planned measures that will produce results – reduction of leakage and losses. There are many reasons that lead into poor situation regarding water losses and many factors are important in getting out of it. Here I will mention just general issues like; infrastructure age, distribution conditions, network, consumers, utility people's education, staff quantity, utility organization, quality control, indicators, technology, financing, legal questions, etc. This issue is very complex and knowledge of someone responsible for dealing with it is essential for gaining results. I will present my personal experience how one particular way of making notes helped me in better understanding of all aspects from problem definition toward solution finding and a lot more than that.

### **Problem**

We have available many papers, conference proceedings and books that are valuable source of theoretical and practical knowledge. It is evident that we have access to a large accumulated knowledge from around the world but still many utilities struggle with very high losses. As mentioned before, there are many driving factors responsible for success in this issue like financing and available technology but essential are trained people who are facing this problem. What are the main obstacles for gaining this knowledge and to use it in a best possible way?

Within the utility we have limited number of educated engineers and managers who are responsible for many issues and tasks and to be focused enough on water losses problem in a holistic way is very difficult for them. To my personal experience these people are faced with a lack of time to study new information and from there also lack of knowledge that can be helpful for them. I was also in the same situation being responsible for managing within our own company but in the same time also capable in comprehending all aspects of water loss problem among our clients – public water utilities. To help someone with the problem he has I must learn about the subject as much as possible in a very short time. Then comes challenge to select appropriate solutions how to deal with the problem, and later how to secure and lead implementation of proposed measures. Of course all this must lead into success. As number of obligation and projects was expanding I was faced with also rising problem how to manage all and still keep the efficiency. It started to be very hard to keep up with everything what had negative consequences on my profession but also on my health and private life. I had to change something before becomes too late, and one of thoughts was to quit this job. But I love this what I am doing so something else had to be a way out of this situation.

## **Solution**

Being aware that one of the main problems was my lack of time to finish so many obligations I started to search for the solution. First answer to my questions was fast reading technique. I have realized that a lot of material I must read to go into the subject what takes time. With this new reading technique I was able to save some time for other tasks. Part of this fast reading knowledge was also system how to make notes when going through the written material what allows us to remember more and later to access this information in a fast and efficient way. This system is called Mind Mapping. There are many books about this subject and for this paper I have decided to use short explanation accessible on Wikipedia (1).

A mind map is a diagram used to represent words, ideas, tasks, or other items linked to and arranged radially around a central key word or idea. Mind maps are used to generate, visualize, structure, and classify ideas, and as an aid in study, organization, problem solving, decision making, and writing. The elements of a given mind map are arranged intuitively according to the importance of the concepts, and are classified into groupings, branches, or areas, with the goal of representing semantic or other connections between portions of information. Mind maps may also aid recall of existing memories. By presenting ideas in a radial, graphical, non-linear manner, mind maps encourage a brainstorming approach to planning and organizational tasks. Though the branches of a mindmap represent hierarchical tree structures, their radial arrangement disrupts the prioritizing of concepts typically associated with hierarchies presented with more linear visual cues. This orientation towards brainstorming encourages users to enumerate and connect concepts without a tendency to begin within a particular conceptual framework. For further details please follow the references.

## **Examples of results**

I have started to use this noting system in August of last year and regarding my case – it helps a lot.

Since then I decided to make all of my notes in this manner and especially when dealing with some problems related with water losses. Now while having conversation with my partners and clients I have become able to make notes about everything we were talking about. Same is for attending conferences and seminars, of course reading books, even planning obligations for each day, weeks etc.

Following are some examples I have made in the last few months (Figures 1, 2). Since we have here my own written notes, small size and resolution in these examples, all interested in this subject are invited to visit poster presentation where will I personally explain in more details all presented.

QuickTime™ and a  
decompressor  
are needed to see this picture.

**Figure 1** Notes from Water Loss workshop (first part) at World Water congress, Vienna , 2008

QuickTime™ and a  
decompressor  
are needed to see this picture.

**Figure 2** Notes from Water Loss workshop (second part) at World Water congress, Vienna , 2008

Also are available softwares that help in creating maps and for those like me with

difficult handwriting if sharing of data is needed than this is very helpful (Figures 4 and 5).

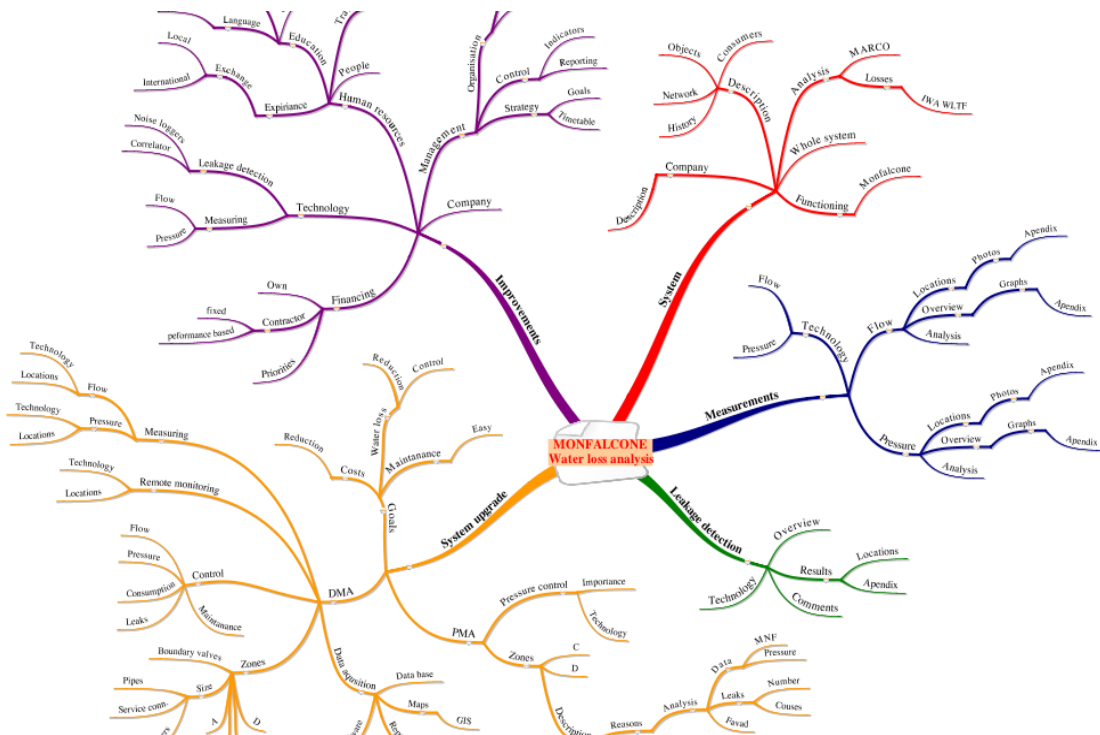


Figure 3 Notes from a meeting with the client in Italy

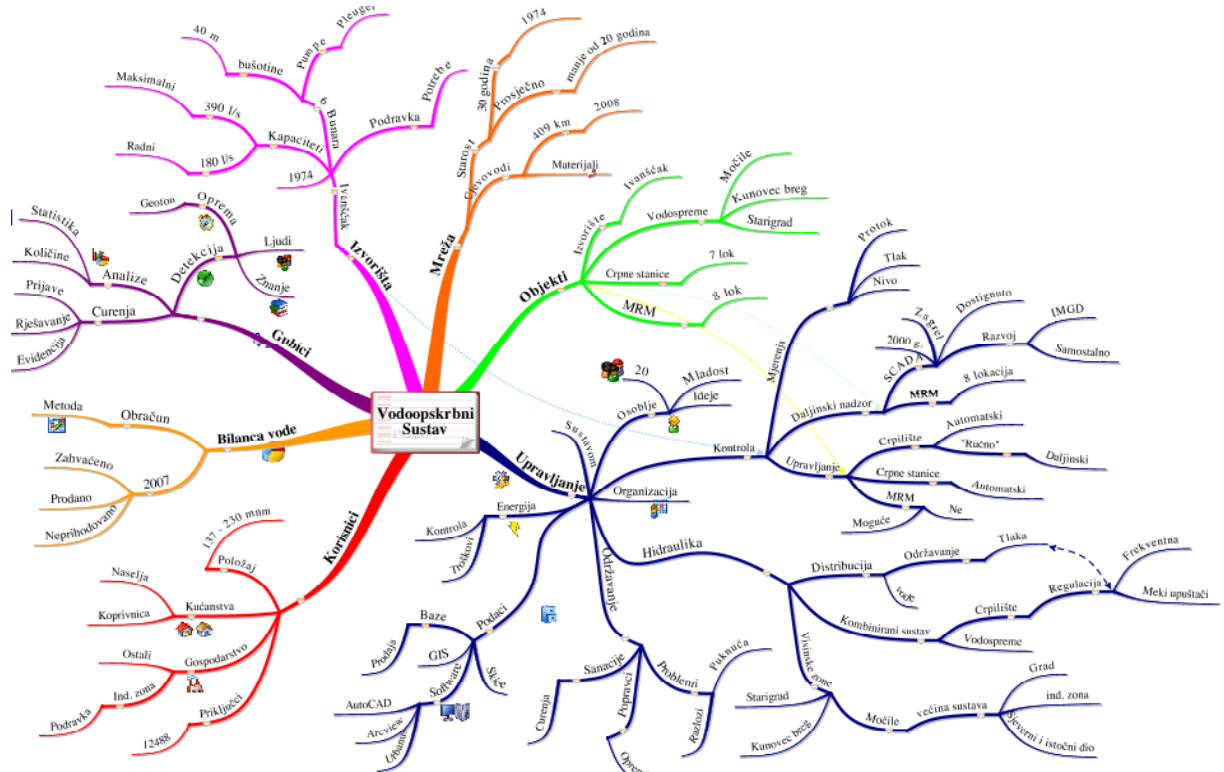


Figure 4 Analysis of water distribution network in Croatia

## Conclusion

Education must be a constant if we want to follow or even lead the progress. Unfortunately most of the people are lacking one basic foundation regarding education – understanding how to learn (process, techniques, etc.). My personal experience shows that there are available tools and knowledge that can have significant improvements on our understanding of learning and at the end on our knowledge and power to make things better. Water becomes scarcity and we should use all available resources that can help in saving it. Dealing with the water loss issue becomes very important for the future of our civilization and I hope my little personal experience can have positive influence on others. For the end and conclusion; Leonardo da Vinci described water as "the vehicle of nature" ("*vetturale di natura*"), believing water to be to the world what blood is to our bodies.

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