PICTURING THE MPM-DEGREE

Implementing educational value
through visual management

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Thesis of 12 ECTS credits
Master of Project Management (MPM)
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ABSTRACT

Could the crucial competences of a professional project leader be visually portrayed in an image? Why would one want to create such image? How would its visual dimensions be? These are the questions that constitute the essence of this research, due to the author's interest to visually define the content of her Master of Project Management (MPM) education at Reykjavik University, Iceland. In exploring the actual and perceived content of the MPM program and to answer the questions above, the author conducted a qualitative research. The objective was to literally picture the MPM-degree by defining the educational content and value, as experienced by its graduating students. By using the lenses of visual management, the collective knowledge of participants was mapped in a visual database. The hope is that the students will then be able to use this framework as to revisit their training and show others what they have mastered. The paper, hence, proposes diagrams to create an illustration of the MPM-degree.

TABLE OF CONTENTS

1. INTRODUCTION

Being a project manager can mean to be able to play a multi-layered role. It takes a wide scope of knowledge and competences to be capable to meet all what the project might require and to meet the variety of demands at different fronts. On a more personal level, as a Master of Project Management (MPM) graduate I found it challenging to fully grasp the whole impact of all the extended knowledge that I felt I had accumulated in the course of my two years of intense studies. I felt, therefore, that to fully appreciate what I had acquired I needed to visually be able to see the complete scope of the education. This I needed both in order to define the full content of what I had experienced and to strengthen my confidence in all the newly gained competences that I now had at my disposal. Based on this my exploration began in search of means to literally picture the MPM-degree by implementing educational value through visual management. There are both internal values and external methods that need to be acknowledged so the full potential of a project manager can be maximized. In this case, a *project manager´s inner circle of competences* is defined as everything that is related to the inner self. That is; thoughts, information, learning, feelings and all that belongs to the inner spectrum of the mind. This self-evaluation can be summarized in the simple phrase *"what do I know"* and is a part of the state of simply *being*. A *project managers outer circle of competences* is in this case defined as the actualization of capabilities when presenting knowledge outwards, either by for example promoting them efficiently to a potential work associate or putting them into action when managing a project. This might therefore be defined as *doing,* simply put *"what can I do"*. Both visions (the inner and outer circle) are imperatively linked, have an effect on each other, and are circling the project manager. This paper will examine how visual management can be used to strengthen the capacities found in the inner and outer circle of an MPM-graduate by presenting diagrams that might serve as a framework of knowledge. It explores how the MPM-students visualize their degree. The idea is that by implementing visual management in the proposed way, the research participants might obtain a clearer vision of his or her scope of knowledge. If a visual overview is created and potentially mapped in the mind (being= reinforced inner circle), a greater framework of knowledge might have been built, that can then be revisited when needed and put into action (doing=reinforced outer circle). Before heading further there is one vital question that needs to be answered; what is visual management and why is it important? The answer to this will be further explored in the following chapter.

2. LITERATURE REVIEW

Images are a powerful tool and have been used since the dawn of time. The early cave paintings made by prehistoric generations are a clear example of what value visual communication held in the early eras of mankind (Walter and Gioglio, 2014). Humans evolved over millennia to respond to visual information long before they developed the ability to read text. In fact, people have drawn for thirty two thousand years but written for only five thousand (Davies, Bathurst and Bathurst, 1990).

Scientific reason indicates that the interest in visual content isn't necessarily just a preference, for images also have an influential impact on the mind. Research suggests that people respond to visuals more strongly and quickly than text alone and that it is actually easier and faster for humans to process such information. The mind processes visuals up to sixty thousand times faster than text and ninety percent of information transmitted to the brain is visual. For that reason images can act like shortcuts to the brain (Mike Parkinson, n.d.). An image can be understood at a glance and easily remembered. It can reduce vagueness and produce clarity. Pictures and images can also be seen as metaphors of what they represent. Metaphors that incorporate context, connect symbols, illuminate and orchestrate information (Barinaga, 2002). The right picture can go further than just telling a story. It can even evoke emotions, conjure memories, and even make people act differently (Mike Parkinson, n.d.).

Visual communication and visual management are also of consequential value in the field of project management. After all, there are few projects than can be lead without some form of visual aid. Just think about post-its, charts, graphs, diagrams, schedules etc. (Posey and Liff, 2004). In fact, visual management can be implemented in almost every aspect of project management, for example in quality management, change management, risk management, in project teams, negotiations, leadership and even self-management as illustrated in *Project-roadmap.com, a*n online visual database of important project management standards and guidelines. The website creator, Raimo Hübner, states that since all project managers are living in the same biosphere, similar methods and tools can be applied on a worldwide basis and visual management is important in such an international context (Raimo Hübner, n.d.). Mostly because images produce an opportunity to present a complicated matter in a simple and effective. This is done by illustrating the essential parts and goals of each project and thus reducing unnecessary complexity (Dan Roam, 2011). However, finding the most effective way to interact, getting people on board with the visual approach and constructing the image can in many cases be a task that requires much thought and skill. Creating the right image to convey a message relies on understanding who the receivers are and how they will react to it. Communication is a two-way process, and a project manager must be as sure of the audience in question, as she is of the images being crafting to reach them. The right graphics can persuade, relate, and influence decisions on an emotional and subconscious level (Walter and Gioglio, 2014). They can create an environment in which systems can affect people on a profound level, enhancing their ability to deliver what is needed in a more committed and effective manner (Posey and Liff, 2004).

Speaking of using visual management to simplify complex project scopes, improving communication methods and such, one might perhaps assume that implementing visuals is the easy approach or the lazy person's choice of tactics. Bill Gates, the co-founder of Microsoft allegedly stated; I choose a lazy person to do a hard job, because a lazy person will find an easy way to do it ("Talk: Bill Gates", 2015). This is not to say however that visual administration is a lazy person's tool because it has the potential to further streamline. For what can be

assumed Bill Gates meant with this quote is that there is always room for improvement by locating the clearest and most accessible road. This approach refers directly to the Japanese philosophy of Lean management that states that by eliminating waste and focusing on continuous improvement in a project´s process, it can result in a strengthened desired outcome (Liker and Convis, 2011). Such value can also be brought about by communicating visually by using what is one of mankind's strongest assets, the minds interpretation of sight (Posey and Liff, 2004).

Returning to the research question "*how* could the crucial competences of the professional project leader be visually portrayed in an image and *why* is that important?" let´s begin with the *why*. In this literary review it is described how optical aid can clarify complex situations as the mind is highly receptive to visual influences. That does illustrate reasons for why the project managers scope of knowledge should potentially be illustrated visually. There is however yet another reason for *why* such a visual framework of knowledge and skills could be advantageous. In Scientific American Mind, from 2014 it read "Why mental rehearsals work". Studies have shown that running through a performance or a process in the mind might help a person perform better in reality. A common theory is that mental imagery activates some of the same neural pathways involved in the actual experience. The mental picture activates and strengthens the very neural circuits, even subconscious ones that control automated processes like pupil dilation (Rodriquez, T., 2014). This mainly refers to the method of preparing for say, an exam or a competition. But imagine going to a job interview. When asked, "*what can you do?"* (outer circle), you might ask yourself "*what do I know?"* (inner circle). Is it possible that a visual preparatory process, such as the one explored in this paper and has the aim to create a visual overview of the MPM-degree, could have similar effects? Could the project manager´s capacities be reinforced if a visual overview of knowledge has already been created and as a result mapped in the mind?

The aim of the following research is not to offer measurable answers, but to reflect on the matter by suggesting ways to obtain such a visual map and by receiving feedback from participants on the utility and benefits of the process. That is, to explore *how* one can begin to remember all that has been learned after two years of intense training and twelve courses, each dedicated to different domains within the MPM-degree. All of this is tested by presenting visual diagrams. The first one highlights brainstorming sessions where ideas are born, gathered and sorted by type. The second diagram is value based and explores the placement of the quotes from the brainstorming session, called educational components, in relation to four influence factors. They are; quantitative and qualitative educational influences as well as subjective and objective. *Quantitative methods* are any high-level enquiry into project realities that seek to establish knowledge by translating reality into measurable units expressed in numbers. However, *qualitative methods* are conducted to find, and interpret data that can be collected or laid out without quantifying them. The researcher is looking at the qualities, the uniqueness and specific attributes. *Subjective project realities* are all the intangible aspects of projects, such as values, attitudes, emotions, thoughts, ideas, opinions, world-views, theoretical abstractions, aesthetics, intangible cultural manifestations, politics and so forth. *Objective project realities* are more tangible aspects of projects that the researcher can look at and measure. Examples of these are processes, data, products, vehicles, building materials, facilities, machines and natural resources. Separating subjective and objective project realities in mainly pragmatic, since it is in many cases necessary to look at both subjective and objective aspects simultaneously. A final element of a second version of the value based diagram that is presented in the research, are symbols placed within four different quarters of the graph. These symbols are

intended to indicate what theme belongs to what part and are a reference to the *Four-dimensional Integrated Research Model (IRM)* that is a model created by the two managing directors of the MPM-degree at Reykjavik University, Haukur Ingi Jonasson and Helgi Thor Ingason (Helgi Þór Ingason, Haukur Ingi Jónasson, 2015).

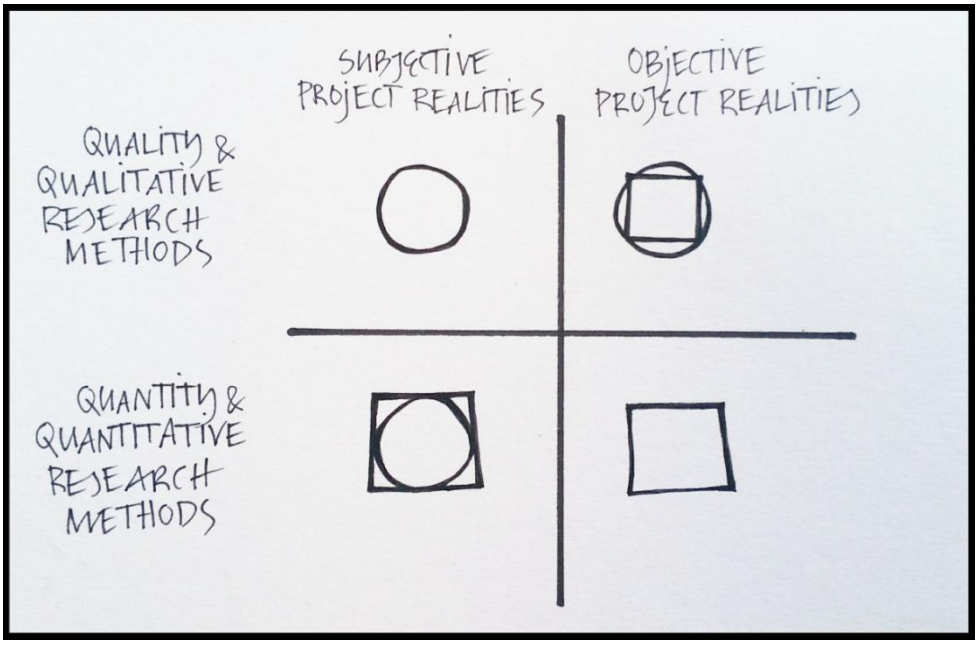

Image 1. *The IRM model.*

The subjective and qualitative dimension, or the circle, symbolizes humanities. The objective and qualitative dimension, or the circle around the square symbolizes social sciences. The subjective and quantitative dimension, or the square around the circle, symbolizes applied sciences. And finally, the objective and quantitative dimension, or the square, symbolizes natural sciences (Helgi Þór Ingason, Haukur Ingi Jónasson, 2015).

3. RESEARCH METHOD

Creating a visual outline of the MPM-degree required the participation of senior students from the academic program. The research was carried out at the University of Reykjavík during two meetings. The first one included nine participants and the second eight participants from the same group. The focus of interest was to capture the participant´s visualization of the degree and to examine their definition of educational value with the use of visual diagrams. Both research meetings began with a *brainstorming session* where each participant wrote quotes (in other words, educational components of the studies) on a post-it and attached them onto different categories on a *course-diagram*. Later, in a *value implementing session*, those components were transferred onto a *value-diagram* to create a collective visual distribution of the degree, controlled by four influence factors. No framework was given in the brainstorming sessions or the value implementing sessions except for the diagrams themselves and their functionality. For that reason, a qualitative approach was chosen to conduct the research and analyze the results. After completion, feedback from participants was gathered in an open discussion to portray benefits of the research.

3.1. FIRST RESEARCH MEETING: STAGE ONE

The first research meeting took place during two stages. The first stage included the *course-diagram*, intended to gather information about each and every one of the twelve degree courses. That is, all obligatory courses during the MPM-degree. Units that were not included were an optional course that had not yet taken place at the time of the research and of course the final thesis. This part of the research was the *brainstorming session.*

3.2 Course-diagram layout

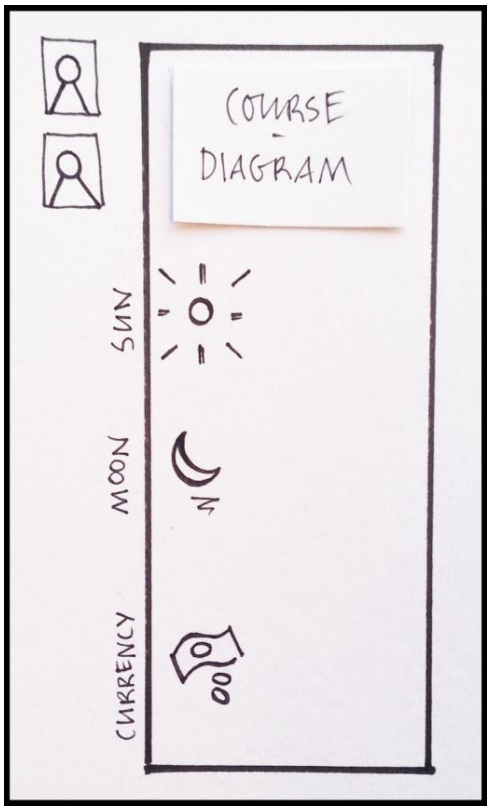

Image 2. *Course-diagram.*

At the top of the diagram there is space for the course-title and a short general description. On the left side there are stick-figures, representing photos of professors and people involved. This information was included to assist participants in remembering what went on and with whom. The diagram has three symbols; the sun, the moon and currency. Each symbol stands for different types of knowledge and was intended to evoke and encourage various thinking methods. The sun signifies everything that is in considered "clear as day" and on the surface. The question presented with the sun was *"what did you learn that you think you were meant to learn?"* The aim was not to collect an exhaustive list of components initially taught during each course. Rather to get an insight into educational components that are perhaps of a particular importance to the students. The moon embodies everything that is hidden beneath the surface, in the "shadow areas of the mind". And so, the following question was asked "w*hat did you learn that came as a personal surprise?"* The aim of this question was to explore what knowledge was gained outside of the course´s curriculum. Some kind of knowledge that was acquired alongside the official content that the participant considered important either for personal growth, development or other reasons. The last symbol, the currency, symbolizes what educational resources

participants considered to be particularly strengthening when "selling" his or hers services or knowledge; the selling point. In that light the following question was asked *"what did you learn that you consider a particular selling point when presenting your competences?"*

3.3. Course-diagram application

Twelve diagrams were hung on the wall in the same time order as the courses were initially taught, giving them a number from one to twelve. Each diagram came with its own colour of post-its, ready to be filled out during the brainstorming session. Participants were given markers and two coloured stickers in either yellow to signify the sun, or blue to signify the moon to be added onto the post-its if they were placed in sun or moon category. This was done so they could be identified during the next step. Neutral white post-its, marked with the identity number of each course were used in the currency category. The nine students were divided into teams of three to brainstorm, either as individuals or as a part of a team, on the contents of the sun, the moon, and the currency-categories. They wrote their ideas on post-its and hung them on the relevant diagram. Each group focused on four diagrams at a time and were then rotated three times until they had added post-its on all twelve. In an attempt to reduce the risk of copying quotes already added onto the diagrams, students moved away between rotations and filled out the post-its at the opposite side of the research area.

3.4. FIRST RESEARCH MEETING: STAGE TWO

The second stage of the research was the *value implementation session.* This is where the *value-diagram* was presented. It is intended to illustrate a collective distribution of the quotes created in the brainstorming session. Educational value was implemented by placing the quotes where the participants believed they belonged, in relation to four influence factors.

3.5. Value-diagram layout

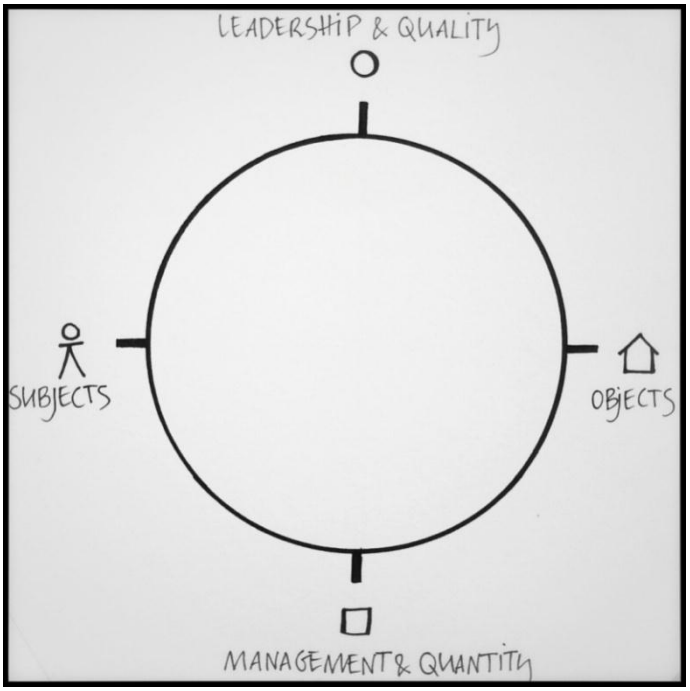

Image 3. *Value-diagram.*

There are four symbols and titles next to the circle, indicating influence factors. To the left on the horizontal side there is a stick-figure with the title *"subjects"*, indicating everything that is related to the human factor and human interactions. On the right side there is a picture of a house and the title *"objects"*, signifying all that is related to matter, or in other words the non-human factor. At the top, on the vertical side, there is a circle with the title *"leadership and quality"*. This symbolizes all that is subjective, all that is "round" and does not have a formal structure. At the bottom there is a square with the title *"management and quantity"*, demonstrating everything that is objective, all that has a formal framework, hence the square. There are no lines dividing the categories in order to maximize the flow of interpretation by participants.

3.6. Value-diagram application

Participants were asked to transfer *only* the sun and the moon post-its onto the value-diagram. They were asked to place the post-its (any post-it) where they thought they belonged on the diagram in relation to the influence factors. The impact of influence factors was high close to the edge of the diagram and became less significant closer to the center. Two or more influence factors could be intertwined, depending on the placement of the post-it. The main objective was not to get the "correct" placement in accordance to the official outline of the MPM-degree, but to create a collective vision of the educational value and influence factors of the degree, as seen by its students. The currency post-its were not included in the diagram distribution, but were sorted by each course number and listed amongst all the brainstorming elements in ***Annex 1.*** This was done in order to maintain a certain focus on the distribution of the sun and moon post-its as the author considers them to portray the over and underlying factors of the MPM-degree. The currency category offers yet another dimension, and was at that time thought best preserved in a separate list.

3.7. SECOND RESEARCH MEETING: STAGE ONE

The second research meeting was also conducted in two stages and eight students from the earlier research group participated. The first stage included the course-diagram with a slight difference, now called *degree-diagram*. The framework was identical and participants were asked to use the same approach as before. But instead of twelve diagrams for twelve different courses, there was only one diagram focusing on the MPM-degree as a whole.

3.8. Degree-diagram layout

Same symbols were in place, the sun; categorized by yellow post-its, the moon; identified by blue post-its and the currency symbol; by green post-its. No photos were included of professors this time. Reasons for modifications were to test results if a simpler yet a more context-open layout was presented. Also to possibly obtain a simplified version of the distribution on the value-diagram, during the next step.

3.9. Degree-diagram application

Participants were given markers, three coloured post-its and the brainstorming session began. The students filled the out post-its with quotes and hung them in the relevant category on the diagram.

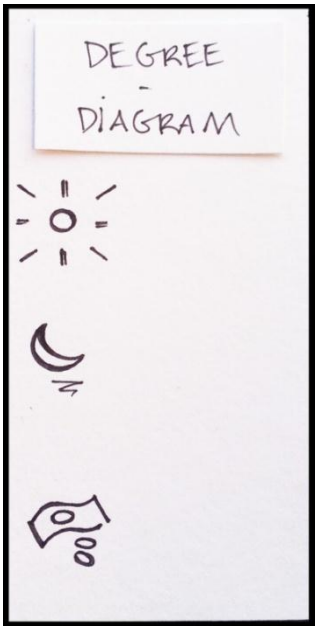

Image 4. *Degree-diagram.*

3.10. SECOND RESEARCH MEETING: STAGE TWO

The second stage of the research was the value implementation session. This is where the value-diagram was presented, although with important changes and henceforth called *value-diagram B.* Like before, it is intended to illustrate a distribution of the quotes created in the brainstorming session. To explore their value in relation to placement and four influence factors, creating a collective picture of the MPM-degree.

3.11. Value-diagram B layout

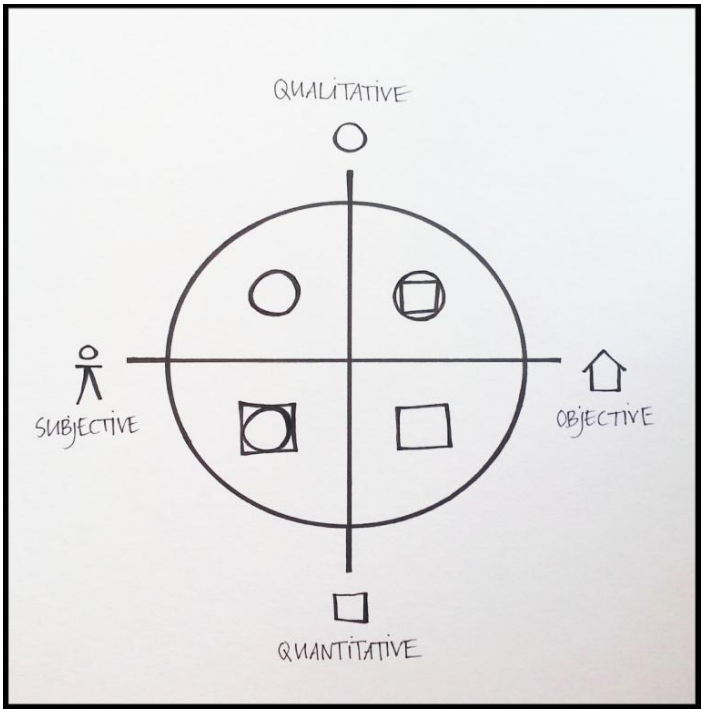

Image 5. *Value-diagram B.*

Same four symbols are next to the circle to signify different aspects of the degree or influence factors, but with a slightly altered meaning. These modifications were made to verify if they had an effect on the general distribution of the educational components in comparison to the first value diagram. To the left on the horizontal side there is a stick-figure, but now with the title *"subjective"* and on the right side is a symbol of a house but now with the title *"objective"*. At the top, on the vertical side, there is a circle and now with the title *"qualitative"* and at the bottom there is a square but with the title *"quantitative".* The definition of those influence factors are explained in the literary review above. Contrary to the last value-diagram, there are now lines dividing it into four quarters. This is an attempt to add clarity and to reduce any misinterpretations as to where each quarter begins and ends. A final change to the former diagram is that there are now additional symbols within each quarter. These symbols are to further indicate what theme belongs to what part, each portraying distinctive themes. They are a reference to the *Four-dimensional Integrated Research Model (IRM)*, also mentioned in the literary chapter above.

3.12. Value-diagram application

Participants were asked to transfer all three colours of post-its (any post-it; yellow, blue or green) created in the brainstorming session onto the diagram, including the currency post-its. The impact of influence factors was high close to the edge of the diagram and became less substantial closer to the center. Two or more influence factors could be intertwined, depending on the placement of the post-it.

4. RESEARCH RESULTS

Image 6. *The brainstorming session shed a light on the educational components of the MPM-degree.*

4.1. FIRST RESEARCH MEETING: BRAINSTORMING SESSION

On most diagrams, the quotes were rather evenly divided between the sun, moon and currency categories, containing on average twenty-five to forty post-its. For a full list of educational quotes from the brainstorming session, for each of the twelve courses, please go to ***Annex 1.***

The quotes were in most cases related to every official course theme. The sun category showed some duplication of quotes within a course diagram, for example *risk analysis* and *negotiation techniques*. Unlike the sun category, the contents of the moon category showed duplicates that stretched over multiple course-diagrams. Especially quotes related to *group dynamics, self-analysis and self-awareness.* The currency category was rather consistent with each course theme and showed highlights of the course components without many duplications.

4.2. FIRST RESEARCH MEETING: VALUE IMPLEMENTATION SESSION

Image 7. *The distribution of post-its after the value implementation session showed that most educational components were either placed in the upper-left part and the lower-right part of the diagram.*

The overall distribution of post-its after the value implementation session showed that most educational elements were either placed in the upper-left part (subjects + leadership and quality) and the lower-right part (objects + management and

quantity) of the diagram. Apparent decrease of post-its was especially apparent in the upper-right part (objects + leadership and quality) and also somewhat in the lower-left part (subjects + management and quantity). A higher amount of the moon category post-its were placed on the upper-left part (subjects + leadership and quality) of the diagram and detectably more from the sun category on the lower-right part (objects + management and quantity). This was detectable by the yellow or blue stickers added onto the quotes, representing the sun or the moon. Duplications of educational components that came into view during the brainstorming session had an effect on the value implementation session, as duplicated quotes were sometimes placed onto different parts of the value-diagram. Quotes related to *group dynamics* were for example both placed in the upper-left part (subjects + leadership and quality) and the lower-left part (subjects + management and quantity). Otherwise the distribution seemed to contain certain consensus as related quotes were often placed on a similar part of the diagram.

4.3. Feedback from participants after first research meeting

A short informal discussion was held after the completion of the first research meeting. In all cases *mentioned* the participants were content that they participated an felt like they gained a better overview of the degree by taking part in the research. The last quote is however a critique of the value-diagram layout and was used to improve the graph for the second research meeting.

"I feel like I can now see how multicoloured the MPM-degree is."

"In my opinion, every graduating MPM-student should go through this process. It might even be interesting to do this after every course during the program in order to highlight the new knowledge or perhaps see what can be reinforced. The fact that I went through the process myself, instead or only reading about it, was a very efficient way to remember what I have learned so far."

"A useful process to understand the scope of the new knowledge I have gained during the MPM-degree. I am confident that this will help me later on, when I actually need to use my knowledge in praxis."

"I feel as if I walk out of here today with a portfolio overview in my mind of each and every course."

"The choice of titles to accompany the circle; leadership and quality, and the square; management & quantity, did in my case create some misunderstanding about their meaning. A simplification or perhaps an improved clarification of the layout might be needed."

4.4. SECOND RESEARCH MEETING: BRAINSTORMING SESSION

The number of post-its was similar, between forty-five to fifty-two, for all three categories; the sun, the moon and the currency. Many of the yellow post-its (sun) were related to different skill sets of the project manager, such as *leadership skills, organizational skills, negotiation skills, management skills* as well as various *analyzing tools* and *methods* used in the field. Many of the blue post-its (moon) were also related to *leadership skills*, although more often based on the inner traits of a leader, for example *self-knowledge, self-awareness,* traits such as *patience, insight, understanding, self-confidence* etc. *Negotiation skills* were also mentioned in the moon category. Many of the green post-its (selling point) also showed a certain degree of duplication of quotes found in the other categories such as *self-confidence, leadership skills* and *negotiation skills.* Others were

related to *sharper focus, project management methodologies* etc. The full list of the educational components created during the brainstorming session can be found in ***Annex 2.***

4.5. SECOND RESEARCH MEETING: VALUE IMPLEMENTATION SESSION

Image 8. *The second value-diagram showed resemblance to the first version.*

Most post-its were, like on the first value-diagram, on the upper-left part (subjective and qualitative) of the value-diagram and the lower-right part (objective and quantitative). The distribution of the sun and the moon categories also resembled the distribution of the first research meeting as the moon category (dark and light blue post-its as seen on the photo) was still dominant in the upper-left quarter and the sun category (yellow post-its, as seen on the photo) was dominant in the lower-right quarter. The moon post-its were much more clustered than the sun post-its, that were more evenly distributed over the whole diagram. The sun post-its were also dominant in the middle of the graph. A new aspect of the research was to include the currency category (dark and light green post-its as the photo illustrates) on the diagram. They were rather evenly distributed, although more were situated in the upper-left quarter than elsewhere.

Viewing the placements of the post-its on the diagram, there seemed to be no uncertainty as to where each quarter began and ended because there were lines that separated them. However, some post-its were put directly on the dividing lines indicating a deliberate placement in between two quarters. For example the quote *creating reports* that was placed on the line that separated the lower-right part (objective and quantitative) and the upper-right part (objective and qualitative). Some quotes were placed in the middle of the diagram or close to the middle, such as *gantt chart, pestel analysis, establishing logical thinking.*

The duplication of quotes in the brainstorming session had a visual effect on the value-diagram as related post-its did in some cases receive different or opposite placements. For example *knowing oneself better* was placed both in the upper-left and the lower-left quarter as well as *negotiation skills* that was placed in the upper-right part as well as the upper-left part. All combined, the overall distribution of the post-its on the second value-diagram was similar to the distribution on the first value-diagram, even though modifications had been made to the graph layout. The post-interpretation was simpler the second time as the post-its were fewer and were as a result more distinctively placed as there was enough room on the diagram.

4.6. Feedback from participants after second research meeting

A short informal discussion was held after the completion of the second research meeting. Participants expressed their delight of seeing multiple thoughts and quotes come together and form a complete picture. They agreed that the resemblance was strong between the two value-diagrams and that the layout of the second version was clearer. The overall opinion of participants was that the distribution of quotes created a convincing image of the MPM-degree and was relatively accurate to their experience during the academic program.

5. DISCUSSION

Interestingly enough, the brainstorming sessions showed several duplicates of the quotes written on the post-its. This might indicate that certain components of the studies are especially memorable or that they are considered particularly important by the participants. The quote *negotiation skills* was for example interdisciplinary in between the sun, moon and currency category during the second research meeting. This might suggest a different interpretation of the subject, depending on who wrote the post-it. Some consider the quote to be a part of the intended learning scope or; the sun. Others view it as a something that came as a personal surprise during the studies or; the moon. This could also be the result of a content being transferred horizontally between courses. What was intended to be taught in one course became a part of a student´s learning approach to the next one, creating building blocks of knowledge. What was once on the surface (sun) has become an integrated part of the student (moon) when acquiring new knowledge.

As for the value implementation sessions, the post-interpretation of the first value-diagram was quite complex are there were no lines on the diagram separating the four different parts. The large amount of post-its being stacked next to one another raised the question whether they received their intended placement or perhaps merely the next available slot. This was one of the reasons for the improvements made to the second value-diagram, where post-evaluation was much simpler. Lines clearly indicated where each quarter began and ended. Fewer post-its meant that is was more likely they received their intended

placement, as there was enough space on the diagram. It was interesting to see that on more than one occasion, duplicates of post-its were placed on different parts of the diagram. This implies that the truth is in the eye of the beholder. Students place the same educational component under different influence factors, depending on their independent understanding. What is most important is who is behind the looking glass and what meaning that person adds to a quote.

The distribution of the sun and moon categories showed similar results on both value-diagrams. The moon symbol was in both cases dominant on the upper-left side and the sun symbol was dominant on the lower-right side. This indicates that the moon category, or what educational elements came as a personal surprise, is considered to be more qualitative and subjective oriented. And the sun category, or what participants assumed they were supposed to learn, more objective and quantitative oriented. Adding the currency category post-its onto the second value-diagram gave an insight into how the participants view and value the selling point of their knowledge. The majority of the currency-quotes were quite evenly distributed between the two dominant quarters. This revealed that participants consider both the moon and the sun categories, as well as the qualitative + subjective and the quantitative + objective influence factors to hold equal or similar value when presenting their skills externally.

Considering the consistency between the distributions on the two value-diagrams, one can acknowledge that the outcome shows how the MPM-degree is viewed by its students, within the framework of the diagrams. The importance of this process is reinforced when taking into account the positive feedback delivered by participants, since they expressed satisfaction with the outcome and found the visual overview of the degree convincing. They also expressed confidence about the effectiveness that the visual diagrams could have later on. They believed the writing of educational quotes and the distribution process might have created a framework of knowledge. An informational database in the mind that could subsequently be revisited when needed. Why a visual overview of the degree is important is in direct relation to the minds interpretation of visual data, expressed in the literary review, and how the mind is especially receptive to optical interpretation.

This research is viewed as a stepping stone towards further development of the diagrams. One can also imagine the graphs being used for a wider range of purposes. Both relating to the project manager as well as the projects. A few application examples are listed here below in *table 1.*

Suggestions for further use of diagrams
Self-management
Mapping knowledge after each course of the MPM-degree
A tool for self-evaluation to identify personal values and vision
Project management
Perspective shifting in international projects
Identifying content and influence factors of a project
Analysing lessons learned after milestones or project closure

Table 1 lists up suggestions for further use of the diagrams.

6. CONCLUSIONS

As well as presenting arguments for the importance of image transmission in relation to the mind´s receptiveness to visual data and the frequent use of visuals in projects, these writings also serve as a foundation for further development by the author. The research produced valuable information about the benefits of visually managing one´s knowledge, in this case the expertise acquired after the MPM-degree. The objective was to literally picture the degree by creating a visual overview of the education, through the eyes of its students. No measurable answers were obtained about the direct impact of visual management, nor was that the aim. The research indicated however to what extent each participant´s insight is important when considering the visual distribution of the diagrams. Especially when looking at different, and sometimes opposite placements of duplicated educational quotes. This shows how important it is for each participant to create their own visual map of knowledge. Because their personal perception and independent interpretation is unique. The visual diagrams presented in the research chapter create a framework for such explorations.

After analyzing the research findings, a final product was constructed by the author. It is an illustrated overview of the MPM-degree and all it supposedly contains and can be seen in a small version here below. **A high definition version, drawn and digital can be found in *Annex 4***. The image is based on the information gathered in the research as well as on a vital input from the board of the academic program. The inner circle of the image relates to the project manager´s inner circle of competences. It is inspired by the moon category of the research and consists of feelings, thoughts and all that reflects the inner self. It demonstrates elements of the inner psyche that are considered important in relation to project management. The outer circle outlines all the skills and techniques presented during the MPM-degree according to the sun category of the research as well as the official outline of the program. The educational components are sorted by course titles, including the final thesis and optional course. The image, created for promotional purposes, renders the contents of the MPM-degree clear, visible and comprehensive to the author. It completes a circle because it is a direct result of the personal question that motivated this research in the very beginning, *"how can I create a visual overview of the knowledge I have acquired after completing the MPM-degree?"*

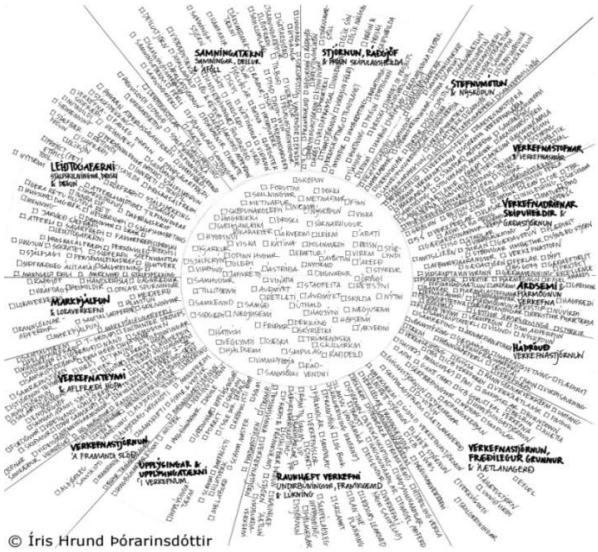

Image 9. *Picturing the MPM-degree.*

7. ACKNOWLEDGEMENT

The art of visual management can be an effective instrument in a project manager's toolbox when coordinating and illustrating knowledge and skill. As it is a dynamic device in human interaction and has many dimensions and adaptations, it must be approached with a skilful eye and awareness. It is my hope that the visual explorations in this paper may serve as a stepping stone for further ventures into the field of visual management. I would like to express my upmost gratitude to the following individuals for their valuable insight, involvement, guidance and support.

- *Dr. Haukur Ingi Jónasson, professor and co-director of the MPM-degree.*
- *The board of the academic program.*
- *My fellow MPM-students who gave their valuable time to participate in the research.*
- *Raimo Hübner, Senior Project Manager at Volkswagen and creator of Project Roadmap.*
- *Ýr Gunnarsdóttir, OE/CI Process Leadership at Shell International.*
- *Bob Dignen, director of York Associates.*

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ANNEX 1: Educational components after first research meeting

1. Strategic Planning: From Ideas to Implementation

Sun
Company strategy
Future vision
Report construction
Adopt strategic theory
Goal setting
Marketing
Strategic planning
Projects are born in strategic planning
Implementation plan
Creating a social network in the class and establish future friendship
Porter analysis

Moon
Working in unisex groups
Challenge to confront completely new types of projects
Experience in report construction
Receiving different messages from professors
Construction of reports according to a pre-determined formula
Teamwork
Brand new experience
Difficult team work. Finding balance between my own vision and the groups vision
Confront personal inabilities and fear of the unknown
Learn to think ahead
Division of tasks

Currency
Strategic planning and counselling
SWOT, Pestel, analysing
Conducting a strategic plan
Strategic planning and its values
Certification
Working with multiple leaders
Strategic planning and implementation

2. Project Management: History, Theoretical Foundation and Project Planning

Sun
IPMA eye of competences
Gantt chart
Beneficiaries
Gantt chart
Eye of competences
Definition of scope
International project managers certification
Work breakdown structure
Critical path
Risk analysis
Cost breakdown structure
Earned value
Eye of competences
Risk management

IPMA Eye of competence
Gantt chart
Risk analysis

Moon
Tested endurance
The Belbin personality test created personal pride
My inner voice asked "is this something for me?"
I learned a lot by working with different individuals according to the Belbin personality test
Discovered new project management software
Risk assessment
AHP analysis
Risk analysis
Burn-down chart
Excel
Learned how to make projects work

Currency
I am now an internationally certified project manager!
International certification
Structured work methods
Knowledge about risk analysis
Planning is a part of work methods
International project manager certification
Financial analysis of projects

3. Project Leadership: Understanding of Self, Growth and Development

Sun
Different types of leaders
Personal strategic plan
Examining oneself
The concept of emotional intelligence
Personality test
Inner psyche
Understand and analyze ones feelings
Personal goal oriented plan
Theories of Freude and Jung
To know oneself
"Right" behaviour
The context of things
Who am I
Human nature
Looking inwards
Daily journal

Moon
To reveal oneself to some degree
The importance of a daily journal
Mirroring ones behaviour in others
Unity of classmates when facing complex matters
I opened up to my inner self
Discovering what influence I have on others in a group
Standing by controversial decisions
Knowing ones feelings and facing them
Confronting challenges

Currency
I am self-consistent
I have written a daily journal on my inner psyche
Establishment and understanding of my personal goals
Leadership skills
Self-knowledge

4. Information in PPP Management and IT Technology

Sun
The Dashboard approach. To be in control of all project aspects
Data is not always information
Being aware of the Halo effect
Analyzing data
The opportunities of a project management software
Halo effect
Finding the right technological solution at a technological information conference
Informational technology
Dashboards for teams

Moon
Challenging to analyze software in order to find the right one
Learning to talk to salespersons that seem to "speak another language"
Establishing criteria. What does a software need to include
Shopping software from a pre-determined criteria
Not buying the "flashiest" software. Perhaps it is too expensive and too complex for your project
Learning to confront new challenges
Discovering hidden qualities of team mates when facing new situations
Learning from ones mistakes
Restoration of projects
When have projects failed

Currency
I of all people went to a technology conference
Learning from ones mistakes, acknowledging them and grow from them
Increased technological and software knowledge
How to prevent mistakes
Comprehension of project management software

5. Strategic Implementation and Project Execution

Sun
Project closure report
Scope
Visual management
How to conclude a project
Creating reports
Plan a project
Project planning
Communicating with sponsors
Update project plan
Working in teams
Outsourcing projects
Making report
Gantt chart project

Organized brainstorming
Implementation
When does a project end?
The "Morten Fangel approach" in categorizing projects
Financing a project
Financial report
Confirmed project plan
Creating a fully active project
Project management

Moon
Learning to know oneself. To know one´s weaknesses and strengths and acknowledging them
Using the strength of others
Learning to work with very different people
Using social networks and connections
Crisis management
Learning how to ask strangers for money, when fund-raising
Appearance
Communicating with the media
Accept criticism and guidance
Working with individuals who have other expectations than myself
Maintain enthusiasm until project completion
Experience from difficult communication with contractors
Working in a team. Who is the leader?
Challenging ethical decisions
Development
Understanding of situations in the life of others
Discovering new and deeper trust between team members
Affection
Finishing a project, from thought to reality
Learning from others. Everyone has something to contribute
Communicating with journalists
Working for a long period with the same team. Tested the group dynamics
Standing by decisions
PR-marketing
Excel

Currency
I am a project manager
Knowledge about the "Morten Fangel-approach"
Consulting and project planning
I felt like a world champion, presenting the project outcome, during the spring conference
Consulting in project closure report
Project planning, financial report, fund-raising, establishing scope
Communicating with stakeholders
Visual management
Project management
Crisis management
Experience from organizing a large scale event

6. Project Leadership: Project Ethics

Sun
To know one self
Ethics

Philosophy
History of ethics
Reasoning
Am I currently in a test tube?
Philosophy
Society's ethics are merely as thin as an eggshell
Ethics

Moon
Using social network under pressure
Asking does not cost anything
Plan and implement under pressure
Collaboration
Looking at project from different sides
Finding the strengths of others
The essence of project management
Implement a conscious ethical approach
Do ethics mater?
Are there always ethical issues to consider?
Can I lead others if I do not possess knowledge of my own characters?
Do I possess self-knowledge, even if I do not want to open myself up in that sense to others?
Is there a one right answer?
Multiple visions of stakeholders

Currency
Knowledge gained from the courses literature
Ethical awareness

7. Project Negotiations, Conflict and Crisis

Sun
Improvement
Setting goals
Negotiation techniques 101
Win-Win approach
Dealing with trauma
Trauma management
Negotiations
Negotiation techniques
The Judo-technique and the karate-technique
Managing confrontation

Moon
The Win-win approach. Contracts are not made so that only one side benefits
Knowing one self
Testing negotiating abilities in the classroom
Finding a tactic that works and is consistent with one´s inner self
Not to be afraid to say no during negotiations
Being able to look oneself in the eye after negotiations
Being self-consistent
Appealing to take chances with the negotiating techniques

Currency
Negotiation techniques
Negotiation techniques
"My personality traits put me in the red category, the understanding type"

Knowing different negotiating skills
Negotiation techniques
Trauma management

8. Project Driven Organizations and Quality Management

Sun
Standards
Optimization
Quality management
Knowledge of the ISO standards
Process management
ISO standards
Different systems: Prince 2 and risk management
Standards
Juran-spiral
The Project Office
Flow chart
The cost of quality
The value of quality certification
ISO 9001 standards

Moon
Creating process charts and flow charts
Visual presentation of reports
Saving all work, and often
Increased self-confidence
Quality manual
Standards become obsolete. Needs to be considered during implementation
Are standards designed for quality management or the other way around?

Currency
Installation and consulting with a quality manual
Discovering visual presentations of processes and flowcharts
Deeper understanding of project management
Knowledge of standards, their definition and implementation
Insight into project offices and their purpose
Quality management
Quality management
Knowledge about project processes
Knowledge about standards

9. Project Leadership: Project Teams and Group Dynamics

Sun
Human relations
Being able to talk to all individuals about controversial subjects
Empathy presents itself in many layers
How do project teams work?
The development of groups
Communication at a deeper level. Going beneath the surface
Constructive criticism
Active listening
Group dynamics

Moon
Nobody is perfect
Accepting criticism
Not to diminish oneself
Not judge a book by its cover
Express oneself in the appropriate manner
Listen!
It is all right to open oneself to others
Learning about personal traits and personality
Motivation
Complementing
Reacting in an appropriate way
Empathy
Learning what information should be shared and what not
Communicating with individuals that feel you have somehow crossed the line
Revelation
Learn to know and value different personality traits, for example introvert and extrovert individuals
Active listening
Accept mistakes
Receive criticism

Currency
Sharpening of ethical values
Human communication
Competent creator of project teams, by taking into account different personality traits
Listening
Understanding group dynamics
Theories about project teams
The mastering of the inner psyche
Counselling in groups, leading groups

10. Consultancy, Change and Organizational Development

Sun
Counselling
Change management
Conference presentation
Gathered most main titles from the degree into one presentation
Counselling

Moon
Activating others
Behaviour
Complementing
Understanding that you cannot be in all places at the same time
Understanding that you cannot control everything
Motivation
Presenting oneself
Not needing everyone's approval is all right
Theories of change management
Organizing and planning
Time management
Leadership styles
Increased self-confidence to become a consultant
Self confidence

Motivation
The consultant is not necessarily the expert in all situations. That is not the consultant´s role
The importance of leadership in change management
Behavioural sciences
Finding a role model in the professor

Currency
Change management
Strategy oriented management
Consulting
Being organized in everyday life reflects on your approach to projects
Conducting skills
Being able to work as an external consultant
Experience of change management
The self-confidence maximized

11. Project and Program Accounting, Feasibility and Finance

Sun
Program accounting
Operation
Excel
Financial planning
Balance sheet
To plan and analyze financial aspects before venturing into a project
Feasibility
Insight into the financial sector

Moon
"You snooze you lose"

Currency
Financing projects
Operating projects
Excel skills

12. Advanced Project and Program Management

Sun
"the house of quality" framework
Product development
Critical chain
Design structure matrix (DSM)
Delivering a project from an idea into the marketing phase

Moon
Patience
Not to be afraid to follow one´s heart

Currency
Critical chain
DSM approach
Knowledge about the project development process

ANNEX 2: Educational components after second research meeting

The MPM-degree

Sun
Leadership skills
Increased leadership skills
Organizational skills
Refined work methods
Group dynamics
Analyzing
Goal oriented management
Negotiation techniques
Implementation of strategy
New knowledge
More efficient procedures and work tactics
Basic knowledge about product design development
Management
Project management
Change management
Project management
Organizing and planning
Leading teams
Leadership
Financing projects
Pestel analysis
Risk assessment
Gantt chart
The "Hráfdags" approach
Establishing logical thinking methods
Creating reports and tracking report implementation
Various types of analyzing tools such as Pestle, SWOT etc.
Theoretical basis
Project planning
Financing projects
Negotiation skills
Various tactics in negotiations
Leadership skills
The Agile approach
Getting to know foreign experts and professors
Human insight
Communication in projects
Communication skills
Training public presentation and improving body language
Ethics
Teamwork
Completing projects
Using various analyzing tools
Risk management
Evaluation tools
Being capable to look at a project´s full scope
Different methods to lead a project
Design structure matrix
Project plan
Critical chain
Establish a project plan

Organized work methods

Moon
Realizing goals
Constant self-analysis
Self-discipline
Acquired methods to maintain inner calm and balance
Forming, Storming, Norming, and Performing model
Logical and clear thought
Time management
Negotiation skills
Self-evaluation
Increased self confidence
Increased self-awareness and understanding
Self-management
Increased computer skills
Time management
Efficient work methods
Opened a door to new interests
You can mix together different management styles
The value of social networking
The importance of saying what you mean
Patience
Knowing how to benefit from social networking
Insight
Divers and solid social networking (fellow students and professors)
Knowing my limits
Not to take thing too seriously
Tolerance
Dealing with group dynamics
Listen attentively and evaluate circumstances before reacting
Better inner balance
Communication skills
Learning to value different individuals in teamwork
How dynamic teams can be created from groups of people
Knowing oneself
Self confidence
Increased self-awareness
Prioritizing oneself
Increased insight into human behaviour
Human nature
Analyzing skills
Increased self confidence
Increased self-understanding
Better insight into personal tendencies and traits
Self confidence
Friendship

Currency
Self confidence
Leadership skills
Project manager
The importance of different roles (stakeholder, project owner etc.)
Teamwork
Management skills
Professional work methods
Teamwork

Evaluation skills
Knowing how to form a project strategy and implementation plan
Knowledge and skills in project management
Certain subject within the field of project management reinforce my personal capabilities
Goal setting
Development
New and wide range of interests have been established and various tools and methods acquired
Consulting
Professional project management
Plan oriented work methods
Critical chain
Project planning
Goal oriented management
Managing projects
Operating tasks
Project management
Project management
Management
Divers knowledge
Being able to manage a project from beginning to end
Being result oriented
Negotiation techniques
Looking at a project´s complete scope
Teamwork
Change management
Negotiation skills
Independent work methods
Sharper focus
Professional competence and experience in communication
Hard and soft negotiation skills
Self-awareness
Strategy planning
Strategic planning
Financial scope
Various methodologies (Lean, 7Cs, burn down etc.)
Project processes

ANNEX 3: Visual management in action, a view from the expert

Ýr Gunnarsdóttir, OE/CI Process Leadership at Shell International on the value of visual management

"Perceived clarity of operations or project progress is something we all have but it is often not until we have visualised that in a very clear way that gaps become apparent. Visual Management helps us crystallize and clarify where we are and where we are going. This in return helps a team or multiple teams to work together in a more collaborative manner driven by a common goal or target. By creating transparency the team(s) can work together to identify where they are against set targets:

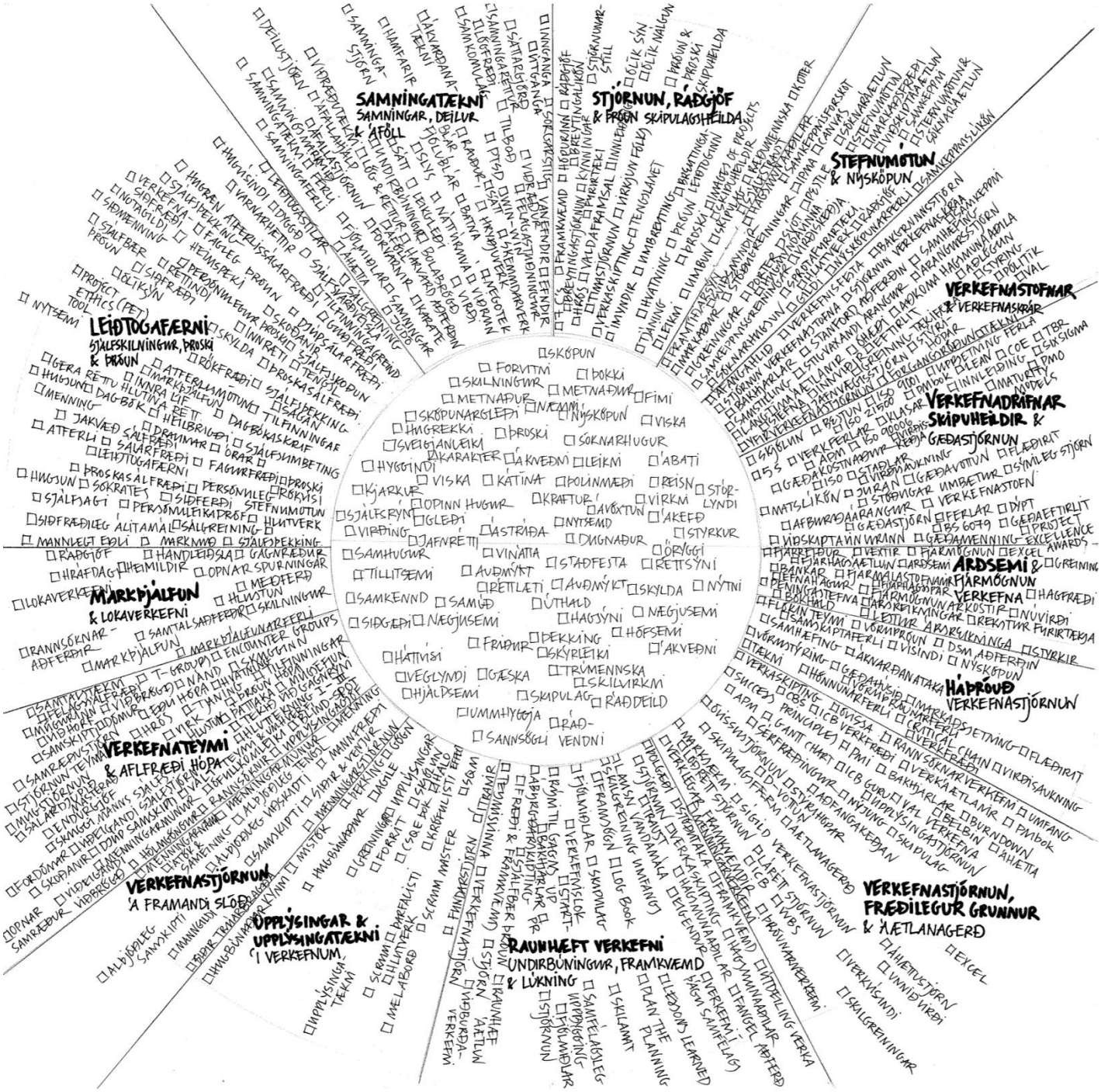
- *PDCA (Plan-Do-Check-Act) – Discuss actions, progress and define or implement appropriate countermeasures.*
- *Measures – How are we doing against our defined measures, leading vs. lagging. Are there any trend "popping" up that we can address in a pro-active manner?*
- *Obstacles – what did you expect vs. what actually happened*
- *Learning – what did we learn and how can we apply that information in order to move forward.*
- *Team – what do we see, learn and do together as a team to achieve our goal/target.*
- *Culture – it is through Visual Management that we can all focus on a common goal or target and it has proven to be a great vehicle in breaking down cultural barriers.*
- *Fun – there is always room for a 'bit of fun' on a Visual Management board; this helps keep the team engaged beyond daily work activities.*

There is no right or wrong Visual Management approach and it has proven to be useful both in monitoring or enabling operations to work in an efficient manner and in managing projects or initiatives. Simplicity is key though and there needs to be a sense of ownership by the team(s) using it in order for it to be and remain purposeful and effective. The most successful Visual Management efforts have started in a 'simple and messy' way and evolved from there as they continue to evolve based on needs identified by the team(s) involved."

ANNEX 4: The MPM-degree, illustrated

The illustration is currently in Icelandic, but translations are planned.

Original version (hand-drawn):



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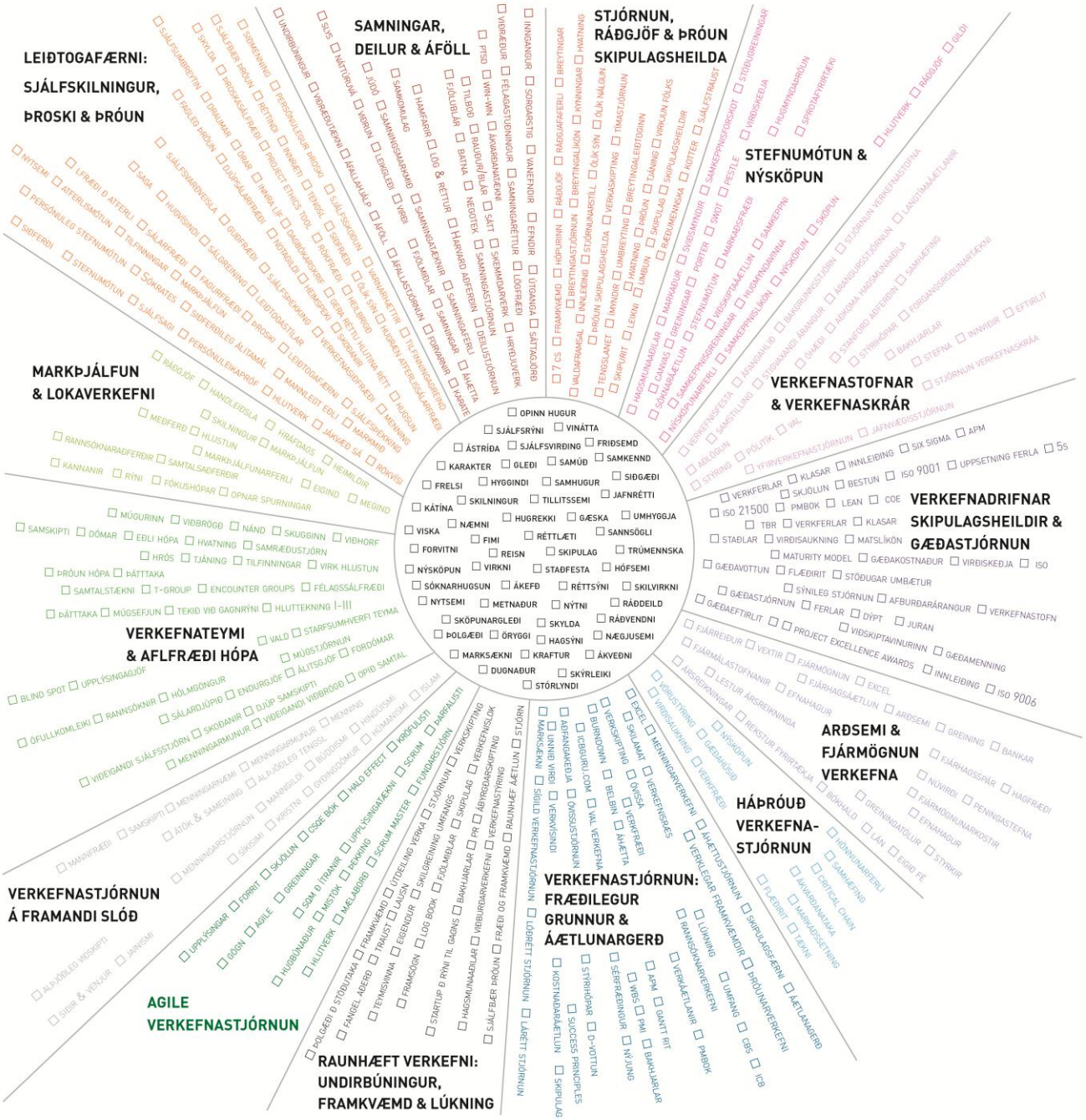

PICTURING THE MPM-DEGREE

Implementing educational value through visual management

Íris Hrund Þórarinsdóttir

12 ECTS thesis submitted to the School of Science and Engineering

at Reykjavík University in partial fulfillment
of the requirements for the degree of
Master of Project Management (MPM).

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