MPM – Master of Project Management

THE EYE OF EXCELLENCE
Achieving excellent results with a Project Excellence Model

June, 2017

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10 ECTS for the degree of Master of Project Management (MPM)
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Thesis of 10 ECTS credits submitted to the School of Science and Engineering at Reykjavík University in partial fulfilment of the requirements for the degree of Master of Project Management (MPM)

June 2017
THE EYE OF EXCELLENCE: ACHIEVING EXCELLENT RESULTS WITH A PROJECT EXCELLENCE MODEL

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Paper presented as part of requirements for the degree of Master of Project Management (MPM) Reykjavik University - June 2017

ABSTRACT

Project excellence and how it can be achieved, has been a topic attracting much research interest. Even though no clear and common distinction has been made on what project success entails, many tools have been developed to assist the enhancement of project success, some even pushing for excellence. The Project Excellence Model is one of these tools and has been used with good results for many years in assessing the excellence of projects applying for IPMA’s yearly Project Excellence Awards. The model has been used for several years, however, its literature foundation is weak as not much has been written about it and few have researched it. The model has never been applied to a project in Iceland. It is for this reason that it was both challenging and exciting as a base for this thesis to apply the model in a case study for The National Power Company of Iceland, Landsvirkjun. The objective was not only to evaluate a large construction project but also to study the model and its assessment process in order to illuminate its strengths and opportunities for improvement. Since the model has mostly been used in an award process it is also interesting to evaluate if the model can be used to achieve excellence in projects and project management and if it can be useful to elucidate the critical factors in project preparation and management in Icelandic projects. The case study and research results show that the model can indeed be applied and used to enhance project performance in order the achieve a successful and even excellent outcome regardless of an international award process. In addition, the model covers critical factors in project preparation, and can function as an iteration for continuous improvement during the entire project lifecycle.

Key words: project management, project excellence, project success, excellent results, project excellence model, IPMA, self-assessment models.

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1. INTRODUCTION
The evolution of project management has been quite rapid in the last few decades. The use of its tools and methods is a fast-growing activity within both public and private sector organizations worldwide. Organizations face an extremely competitive environment characterized by rapid changes. Therefore, the importance of professional project managers within these organizations is becoming greater and a demand for an appropriate education and international certification is increasing.

Despite a fast-growing industry of project management professionals and decades of experience, project results continue to disappoint stakeholders (Cooke-Davies, 2002). The considerable amounts of money organizations are putting into projects is not delivering the preferable success rate with only about one third of projects finishing successfully (Standish Group, 2013). For this reason, increasing the success rate of the execution and management of projects is crucial. A variety of tools and methods exist that have been pioneered to achieve better results and strengthen the foundation of success in projects and even encourage organizations to go beyond success and strive for excellence.

One of these tools is the Project Excellence Model (PE Model) - an assessment model that has been used by the International Project Management Association (IPMA) to assess and reward projects or programs around the world for their excellence. The design of the model is to supply the user with an assessment guideline. The model is based on an open and adjustable assessment designed to evaluate and continuously improve project management methods, drive for continuous improvement, regularly monitor the ability of providing sustainable results, serve as a project audit and maturity assessment tool, and finally recognize projects that prove to be, or are striving to be excellent and show excellent leadership and management performance. To further evaluate the model and research how the assessment process works, the model was applied in a case study to a large construction project for The National Power Company of Iceland. The IPMA assessment process for its yearly excellence award was used mixed with the author's own research methods.

The National Power Company of Iceland, Landsvirkjun, was founded in July 1965, and is owned by the Icelandic state. It produces 75% of all electricity used in Iceland and was created to optimize the country’s national energy resources and provide electricity at a reasonable price by operating hydroelectric power plants (Landsvirkjun, n.d). The PE Model was applied to the construction of Þeistareykir, which is the first geothermal power station that the organization is building, and the first Icelandic project assessed through the model.

This research paper will focus on the discussion on project success and excellence and how these factors relate to the Project Excellence Model. Since the model has not yet been applied to a project in Iceland, the model will be assessed through the case study of the Þeistareykir project, where its possibilities will be evaluated. A focus will also be on evaluating if the model can benefit projects and project oriented organizations to achieve excellent results by using the criteria of the model to assess opportunities for improvement, and increase the project management maturity.
The objective is to answer the following research questions:

1. Can the Project Excellence Model be used as a tool to achieve excellence in projects and project management?
2. Can the model be useful to elucidate the critical factors in project preparation and management in large construction projects in Iceland?
3. How did the case study of Þeistareykir reveal the strengths and weaknesses of the PE model, and its application?

2. LITERATURE REVIEW

The literature review focuses on the examination of self-assessment models and awards provided to encourage and support organizations to enhance performance and strive for excellence in projects. To do so project excellence needs to be reviewed and defined. By analyzing what models are in place, the foundation for the Project Excellence Model is examined along with the various tools project owner's, project teams and organization can use for self-assessment.

2.1 Projects and Project management

In order to bring a discussion of project excellence together it is important to define the concept of a project and project management. A project can be defined as a “temporary endeavor undertaken to create a unique product, service or results. The temporary nature of projects indicates that a project has a definite beginning and end” (Project Management Institute, 2013).

The definition of project management is the actual process of managing the accomplishment of the project's objectives using the resources and structures already existing within the organization. Project management pursues the management of the project by applying certain methods and tools (Munns & Bjeirmi, 1996). Project management is therefore a specific methodology to prepare, manage and complete certain project tasks, with the objective being to achieve multiple goals set forth in the project. The management must entail a motivation for the participants to obtain the project goals (Project Management Institute, 2013 and Helgi Þórar Ingason & Haukur Ingi Jónasson, 2012).

A distinction between project and project management can be identified in the differences of their emphasis. In a project, determining and choosing tasks that will be beneficial for the organization in a comprehensive way is prominence. The project management is focused on the control and planning of these tasks, and the concern is to deliver the project on time with relevant standards of execution within an accepted budget. Once the product of the project is delivered its management is dissolved and a new operational management of the project will take its place. Hence the difference of the focal point in project management is that it is short term until the delivery of the product, but the project is itself long term and is not just based on the development cycle but the whole project life (Munns & Bjeirmi, 1996). It is important to have a clear distinction between project and project management in the discussion of project success and excellence.
2.2 Project Excellence

It is becoming more common that organizations use Project Management as a tool to achieve better results, more productivity and reach organizational goals (Andersen, Birchall, Jessen & Money, 2006). If Project Management is implemented in the right way it can allow organizations to execute more work, with less resources and in less time. This can lead to an improvement in productivity and efficiency with more effectiveness for the organization. But reaching this maturity can take time and it can cost considerable effort (Kerzner, 1987). When taking into account the great amounts of money organizations are spending on projects, striving for excellent results is an important factor (Schaltegger, 2011). For the past decades, many researchers on project management have been focusing on trying to shed a light on which factors lead to project success and how they can be identified, and possibly lead to project excellence. According to Davies (2002) this is not a simple task and in this discussion, it is important to distinguish between project success and project management success, for one can be successful without the other.

Before any discussion on project excellence can take place, project success must be defined, how this can be achieved, and how that can further lead to project excellence. “The topic of project success is at the heart of project management” (Muller & Jugdev, 2012) and there are many elements that affect the level of project success. It is therefore according to Muller and Jugdev (2012) one of the highest priorities of both project managers and project stakeholders. Many scholars have researched project success and what factors projects need to possess to fulfill the criteria of success. Despite this research not all of them agree on which factors are critical or what makes projects successful and Muller & Jugdev (2012) claim that few subjects within project management are so often debated but at the same time so seldom agreed upon. They even conclude “that a clear definition of project success does not exist and there is a need to develop meaningful and measurable constructs of project success”. Belassi and Tukel (1996) claim that it is difficult to evaluate projects, for the people involved distinguish between failure and success in different ways. For example, a project can be perceived as a failure by the top management of the organization while it might be considered a success by the client. Even though the outcome is satisfying by the customer it might not meet the top management’s wishes as planned. Here both the client and top management value the project outcome in different ways as they evaluate project success differently.

According to Atkinson (1999) and Kyllindri, Blanas, Henriksen and Stoyan (2012) the golden triangle of time, budget and required quality was at the center of earlier discussions on what criteria’s lead to success. Nonetheless this came to be much more complicated with more identifiable criteria. Further research on the success of projects concludes according to Wateridge (1998) that a development of a common criteria checklist for project success suitable for any and all projects is impossible, since these criteria will differ between projects depending on their complexity, size and uniqueness. Andersen et. al (2006) state that even though all projects strive for excellence they are all characterized as an exclusive task which is under most circumstances confined to strict constraints on time and budget but at the same time also involve a complicated set of processes. Rockart (1979) states that critical success factors are particular areas where satisfactory outcomes will insure the organization an eminent competitive performance.
These areas could be defined as key, where things have to be right for the project to flourish, and if results are less than sufficient then the organizations endeavor is less than determined in the beginning. When looking at project excellence there are two important factors according to Kerzner (1987) that can affect the project maturity of the organization and how they can affect the execution of excellent projects. Firstly, there must be a demand for project management within the organization and secondly there must be a strong corporate commitment to include project management into the foundation of the organizational operation system and secure the education and training of the employees.

For at least five decades these factors, time, cost and quality have received the most attention (Kyndr, Blanas, Henriksen & Stoyan, 2012). However, this is changing and could be a result of a higher importance of stakeholder’s impact and influence on projects and their requirement of a broader strategic perspective. That focus needs to be on the long-term value of the project and the sustainability of its outcome. Projects could then be viewed more as an extended strategic change, and if accepted they must increase the social, environmental and economic welfare of the many stakeholders connected to the project (Andersen, Birchall, Jessen & Money, 2006)

2.3 Tools and methods
Several tools and methods are available for assessing organizations and projects. An overview is given in table 1 on some models and frameworks available for organizations to seek out opportunities for improvements in the organization of projects. The models cover a wide range of areas that can be identified. They all have a common objective of assisting organizations or projects focusing on management and processes in order to receive greater results. By identifying these opportunities, performance and results can be enhanced. Organizations can then apply for awards to seek feedback from an external body and a recognition of their practices as well as use the award process to identify further opportunities for improvement.
<table>
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<td>EFQM Excellence Model</td>
<td>2 areas 9 criteria Sub-criteria</td>
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<tr>
<td>The Project Excellence Model</td>
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<td>People &amp; Purposes, Processes &amp; Resources, Project results.</td>
<td>Identify good management throughout a project where results are achieved alongside the intention of delivering an excellent project.</td>
<td>The Project Excellence Awards</td>
</tr>
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The following chapters will discuss each resource to get a better insight of their origin, purpose and function.
2.4 Total Quality Management

Many researchers claim that Total Quality Management (TQM) model was introduced by the American researcher named Edward J. Deming (Davis & Fisher, 1994; Grandzol & Traaen, 1995; Milakovich, 1991; Tamimi & Gershon, 1995). The method, or the philosophy like some researchers like to call it (Ehigie & MacAndrew, 2005 and Kaynak, 2003), can be defined as a management approach used to improve organizational function throughout the entire organization by continuously reviewing processes without additional resources. It is done by attempting to eliminate waste and prevent deviations with the objective of satisfying customers and stakeholders with the hope of exceeding their expectations (Kaynak, 2003; Jiménez-Jiménez, Martinez-Costa, Martínez-Lorente & Dine Rabeh, 2015; Ehigie & McAndrew, 2005; Prajogo & MacDermott, 2005; Baird, Jia Hu & Reeve, 2011 and Milakovich, 1991). American organizations started using the approach around 1980 for improvement of their organizational performance and to gain a competitive advantage due to loss of market share both on internal and external markets (Kaynak, 2003).

It can be said that TQM’s key elements are management commitment, employee engagement, decision making based on facts, continuous improvement and a focus on customers (Milakovich, 1991). Levy (2003) agrees and states that the support of the top management in the organization is equally as important as including all employees in the organization because they play a key role in implementing and maintaining a quality system by working with the approaches applied. It can be said that that TQM can be used as a learning platform for enhancing operational performance, results and quality of the organization (Jiménez-Jiménez et al, 2015 and Spence, 1994).

Deming also introduced the Deming/PDCA cycle which stands for Plan, Do, Check, Act. It is an approach that includes a series of steps that organizations can use for continuous quality improvement. By using this approach, organizations are continuously learning and gaining knowledge as the cycle is never ending (The W. Edward Deming Institute 2016 & Johnson, 2002).

![Figure 1. The Deming Cycle](image)
To influence organizations to adopt and develop quality control, The Deming Prize was established in the 1950’s by the Union of Japanese Scientists and Engineers (JUSE) (Kaynak, 2003 and Union of Japanese Scientists and Engineers [JUSE], 2015). The award is given out annually and all organizations or institutions can apply regardless of industry, if they have implemented and are continually developing and improving effective quality management methods. The Deming Prize can be used as an improvement tool for organizations to influence management methods for enhancing business performance (JUSE, 2015).

2.5 The Baldrige Excellence Framework & The Malcolm Baldrige National Quality Awards

The Malcolm Baldrige National Quality Awards and the Baldrige Excellence Framework was created in 1987 by the American Congress and was legislated into a law. The purpose of the awards was to help American companies to strive for excellence by enhancing their performance, focusing on quality and making them compatible on the global market (Baldrige Foundation, 2017 and DeJong, 2009). The awards are granted annually to organizations which have successfully implemented the TQM into their business and included employees into the entire quality control of the organization (Shetty, 1993).

The Baldrige Excellence Framework provides a performance system that can help companies reach a high standard of organizational performance in order to get sustainable results. The model consists of seven categories that combine leadership, strategy, workforce, operations and results (DeJong, 2009 and Shetty, 1993). The Baldrige program is a framework that has been built around the system and methodology to help organizations apply the system.
2.6 EFQM Excellence Model & The EFQM Excellence Awards

The EFQM Excellence Model (EFQM) was created in 1992 by the European Foundation for Quality Management which consists of leading organizations in the market. Their objective was to “increase the competitiveness of European organizations and support the sustainable development of European economies” (The European Foundation for Quality Management [EFQM], n.d.). The model is used as a framework to assess organizations for the European Quality Awards (now The EFQM Excellence Awards) to motivate continuous improvement in organizations (EFQM, n.d. and Westerveld, 2003). Eskildsen & Dahlgaard (2002) state that “The EFQM Excellence Model is the most widely used model for self-assessment in Europe” with the goal of enhancing organizational excellence with continuous improvements.

The model consists of two areas and nine criteria, the enablers (leadership, people, policy and strategy, partnership and resources and processes) and results (people results, customer results, society results and key performance results). The enablers focus on potential implementation, strategy, development and the results that can be achieved by the organization (Santos-Vijande and Alvarez-Gonzales, 2007). Each criteria consists of several sub-criteria that includes guidance on how organizations can enhance their performance by developing that certain criteria (Bou-Llusar, Escrig-Tena, Roca-Puig & Beltrán-Martín, 2009).

The EFQM model can be used by all organizations regardless of size or industry. The EFQM model covers both human (soft) and technical (hard) sides of the organization (Llusar et al, 2009) which is important in achieving overall excellence.
2.7 X model
The X model can be used to assess individual projects by using the method of project control. The model is frequently used in Norway to gain understanding of situations that can occur in projects and as a guideline for continuous improvement. The name of the model comes from its shape, where it is divided into five elements which consist of the following: personal inputs and outputs, factual inputs and outputs and the work processes.

![The X model diagram](image)

Figure 4. The X model

The personal inputs and outputs relate to the employees and/or the project team such as knowledge, experience and communication. The factual parts include tasks, challenges, plans and other elements that are measurable. The work processes include all the processes linked to the project and the project team along with interactions such as team meetings. The model is not detailed so organizations must concentrate on what is important. Never the less, it covers a wide range of elements by including both human and personal factors as well as defined facts. The model is used to assist the project owner or project team to analyze the status and situation of the project to estimate how the improvement of the function should be carried out (Andersen, 2010).

2.8 The Shingo Model & The Shingo Prize for Operational Excellence
The Shingo Model and the Shingo Prize for Operational Excellence was established in 1988 when Dr. Shingo received his Doctorate degree of Management from the Utah State University. The Shingo Model is a principle that can be used for guiding organizations to fill in the gaps in the business while working towards receiving excellent organizational or enterprise results. The model consists of the following four principles which include ten sub guiding principles; cultural enabler (lead with humility, respect every individual), continuous improvement (seek perfection, embrace scientific thinking, focus on process, assure quality at the source, flow & pull value), enterprise alignment (think systematically, create constant purpose) and results (create value for the customer).
This powerful framework can be used as a guide for organizations in transforming culture and achieving effective results (Shingo Institute, 2017).

![The Shingo Model and guiding principles](image)

**Figure 5. The Shingo Model and guiding principles**

To achieve excellent results organizations must transform their culture by engaging all employees to make small or large changes on an everyday basis. The Shingo Prize is based on an assessment of culture and results of the organization and how obvious the principles are as a part of management and employee behavior. This assessment method is unique and can determine if organizations have made sustainable improvements. The Shingo Prize is said to be the highest standard in the world for maintaining operational excellence (Shingo Institute, 2017).

### 2.9 Project Excellence Model

The Project Excellence Model was issued in 1990 by the German Project Management Association and is based on the EFQM model and the Total Quality Management approach. The purpose of the model is to identify good management throughout the project where results are achieved along with the intention of delivering an excellent project. The model is used as an assessment tool for The International Project Management Association (IPMA) in evaluating projects applying for the IPMA Project Excellence Award (PE Awards) (IPMA, 2015). The model is based on TQM and in part built on the EFQM model which has been widely used by organizations to assess quality and organizational results. The similarity of these two models is no coincidence. The PE Model is to be used as an extension of the EFQM to help organizations strive even further to effective and sustainable excellence (IPMA, 2016 and Westerveld, 2003). Like the EFQM the PE Model is quality oriented, but differs from other models for its emphasis on efficiency of processes and how they can impact the results of the project.
This can assure stakeholders and managers how necessary it is to spend time on quality management in projects (Szalajko, Dzwonnik, Klein & Raue, 2014).

The model was reviewed and enhanced in 2016. Now it also covers and includes new areas such as the environmental impact that the project might have on the surroundings, the carbohydrate footprint it might leave and the sustainability of the project (IPMA, 2016).

### 2.9.1 Model structure

The PE Model is divided into three areas, A. People & Purpose, B. Processes & Resources and C. Project Results. The People & Purpose, which is the foundation for excellence focuses on excellent management leadership and that the project team is composed of the right people. Having a joint vision for success is important to propel improvement and assist the project to achieve higher results than expected. “This area is considered to be the foundation of project excellence” (IPMA, 2016). In Processes & Resources, which is the reinforcement of excellence, the aim is to review which processes, protocols and resources the project is using and how efficient and sustainable they are. This area can be a foundation for innovation that can lead to further improvements in the project. The Project Results which is the proof of excellence, summarizes the other two by reviewing project results from every angle by seeking proof for excellence in management throughout the project lifecycle. A project can only be excellent if the project performance is outstanding and the results are sustainable for key stakeholders (IPMA, 2016).

![The Project Excellence Model](image)

The three areas of the model are intertwined and include detailed assessment criteria and sub-criteria that play a guiding role for organizations, project managers and/or project teams to evaluate their projects. The organization, project manager and/or project team must show that the project has been managed successfully throughout all stages of the
project (IPMA, 2015). Szalajko et al, (2014) state that by splitting the areas of the model into criteria it offers the possibility of benchmarking different projects and discoveries that can be defined at various levels from the employees and clients to project managers and sponsors. They assert that the model has a broad range of assessment factors and considers the perspective of the local communities, suppliers and subcontractors which can be crucial for project success.

**Figure 7. The Project Excellence Model-criteria’s**

### 2.9.2 Applying the model

As mentioned above, the PE Model is a tool that could be used for benchmarking purposes and can help project managers and teams mirror what their strengths are and where they can possibly improve. The PE Model can be applied to projects of a different scale and size, regardless of type or industry and even if the project management approach has not been used in the project (Westerveld, 2003). The model is very open and can be adapted to any kind of project. It does not endorse any particular methods, approaches or tools. Therefore, it allows organizations and project teams to use different approaches that are suitable to each project. By focusing on the most effective methods and tools available it encourages continuous improvements in order to exceed expected results (IPMA, 2015; Grau, 2012; Hajrovic, Milacic, & Nicic, 2013).

The areas of the model are based upon the essential experiences, insights and concepts of the Total Quality Management model. That being said, the PE Model only reveals the status quo quality of the current management. The model is in continuous evolution based on former experiences of project teams and organizations (Hajrovic et. al, 2013).
The distinctly identified areas and criteria of the model make it simple for those using it to estimate strengths and pinpoint those fields that need improvement. It also assesses the development acquired in the pursuit of excellence in Project Management while at the same time taking into account relevant stakeholders feelings of results. Therefore, the PE Model can be applied to any project phase whether it is fully finished or not (IPMA, 2015).

The PE Model could also serve as a development tool for project managers and project management methods. It is possible to use the vast field of performance assessment criteria as an internal certification process and build it into a personal development path. This allows for organizations to use the PE Model to support effective project management and advance into greater success by focusing on improving the knowledge of the way excellent projects are executed in a continuous and systematic way.

Due to the openness of the model the assessment procedure is very important. The experience and expertise of the assessors is the foundation for the prosperity of the review and for it to be beneficial to the organization in future projects. Information about the PE Model and its assessment procedure is quite accessible and therefore all project teams could in theory use it to improve and gain better results within their projects. On the other hand, even though this process is well known, the success of using the model is very dependent on the knowledge of those assessing and applying it (Grau, 2012). Grau (2012) states that in order to gain a maximum benefit of the model it is important that the assessment method and the model are combined in the same way IPMA sets up its award process, or if they received proper training by experienced IPMA assessors.

The literature foundation of the model is quite weak because little has been written about the model (Erik Månsson, coach, verbal reference, January 14th 2017), the use of it or how the model can be applied in order to measure excellence in projects. One of the main reasons might be that the model is mainly used to assess and evaluate projects that apply for the IPMA Project Excellence Awards. One article has been written about applying the PE Model on a case study. In this article Westerveld (2003) is researching how the success factors of the PE Model can be transferred to organizations. He states that the organizational result areas of the model are leadership and team, policy and strategy, stakeholder management, resources, contracting and project management (scheduling, budget, organization, quality, information and risk). He also claims that the model links success criteria and critical success factors that can be used to determine if the project is successful. He divides the PE Model into five project types since project goals and external factors between projects can vary by their nature and result areas. In order to achieve excellent project results, organizations need to select appropriate types of projects. The results of the case study show that the model can successfully be used to improve the performance of the project organization by connecting the project result area to the organizational areas along with the project types (Westerveld, 2003).

Using the model has prompt benefits for the organization, additionally, it reinforces long term project development, since the organization can use its increased knowledge on their capability to achieve project excellence. This makes room for successfully gaining a competitive advantage, since the model helps with the self-awareness of project aligned organizations which assist them to achieve faster results than their competitors.
In whole, the PE Model supports a wider perspective both externally and internally, as well as innovation and continuous improvement (IPMA, 2015).

2.9.3 IPMA Project Excellence Award

The IPMA Project Excellence Award is granted annually and is divided into three levels of winners; bronze, silver and gold. The assessment process is well structured and organized and can be divided into three phases. The first phase is preparation and application, the second phase is the assessment, and third phase is the decision and award ceremony. Projects or organizations have to undergo a webinar on the PE Award and the PE Model before they can submit their application and the application report. The next step is to get assigned an assessor that assesses the project through the report by using the PE Model and a scoring table before a site visit takes place. During the site visit the assessors have the chance to ask the project team further questions and review proof of documentation and results. In the final step the assessor submits the jury report followed by the award ceremony (IMPA, 2015).

Szalajko et al. (2014) state that the best projects in the world have been assessed and rewarded for their results by the means of the PE Model. They assert that it indicates that organizations that use the model have not only come across an excellent reference model but they can be assured to move towards an effective improvement of their quality processes and business. They are following the example of best practices of excellent projects. Although Szalajko et al. assert this statement, there are other factors that must be considered. Organizations that apply for the awards usually have immense experience in project management along with paying a great amount of money to participate in the process.

3. METHOD

The objective of this research is to explore how the Project Excellence Model can be used to measure project success in organizations that use the model as a self-assessment model to enhance project performance and to use it for continuous improvement. A case study was conducted assessing a large construction project and taking it through the model using an altered IPMA Quality Awards assessment method in order to evaluate how well the project complies to the model areas and criteria.

3.1 Research approach

A qualitative research method was used to gather data for the research. In using a qualitative research method, the focus is mainly on the participant and the understanding he has on his environment, experiences and circumstances. This method does not include any numerical data. An open-ended questionnaire was designed to perform semi-structured in-depth interviews to provide detailed information about the project. The researcher controls the interview, and there is room to ask further questions about certain criteria or even add new ones. Using this method can give a deeper insight into the conditions of the interviewee and discover new information (Pasian, 2015).
These types of interviews follow a similar pattern to that used to develop a questionnaire and is delivered using questions with fixed wording and usually in a set order. The objective is to gather data in sufficient quantity and of a specific type that can be analyzed using statistical techniques. By contrast, non-standard or qualitative interviews are designed to understand particular aspects of a situation and expect to explore situations as they arise in the interview. By using a case study and researching one particular case it is important to interview the key employees of the project and specialists in the field (Pasian, 2015). This research was based on three iterative in depth interviews with selected individuals from the project team and from the organization.

3.2 Data gathering
Before the interviews could be conducted, preparation and planning had to take place. When the PE Model had been studied a large and detailed questionnaire based on the IPMA Project Excellence Model and Project Excellence Baseline was prepared. The Baseline was used as a guide to generate questions in order to achieve information needed to assess the project. The data gathering was organized around the model in order to test it and possibly proposing a new theory (Pasian, 2015). The questionnaire was laid out in an Excel worksheet and the questions were classified into three areas according to the PE Model. The questions were diverse and covered all criteria and aspects of the model.

Between interviews, data was reviewed and analyzed to prepare for the next interview to make sure all essential information had been gathered. This process was then repeated. The questionnaire was used as a guideline for the in-depth interviews with each interview focusing on different areas of the model according to the role and position of the interviewee within the project team. This was done to make sure that all important information was gathered and nothing would be forgotten.

Interviews were conducted at the headquarters of the National Power Company of Iceland and each interview took between one to two hours. Two interviewers were present at each interview, each having a clear role. One controlling the interview, asking the questions and engaging the participants. And the other documenting what was being said and the information revealed.

To get further information about the development and the project team, two questionnaires were sent out to two individuals since they were not able to meet the researchers in a face to face interview. One individual was from the project team and one was related to the development stage of the project.

3.3 Choosing the participants
In the first stages of choosing the research subject, the will to do a case study on the possibilities of the PE Model in promoting excellent projects was at hand. In early discussions with the thesis supervisor, the interest the National Power Company of Iceland showed in further developing their project management methods and maturity came up as well as their interest in learning about and possibly using the PE Model to further improve their projects. With this information at hand the organization was contacted to explore their interest in participating in the research.
After a meeting with a few project managers and the head of the Project Management Office where the idea of using the PE Model to assess the excellence of a project for the organization was introduced. It was decided that the National Power Company of Iceland would provide a large construction project to assess through the model. Cooperation was established. The organization provided information on the geothermal power station construction project for evaluation.

3.4 Participants

Six participants took part in the research. Five participants were a part of the project team in the construction stage, and one was involved in the project during the development stage. The first interview was conducted on the 24th of March with Ásbjörg Kristinsdóttir, Chief Project Manager for Búrfell power station and Einar Erlingsson, Resident Engineer and Deputy Project Manager for Þeistareykir power station. In this first interview the focus was on acquiring an overview of the project and obtaining answers to as many background questions as possible. The second interview was conducted on the 29th of March with Gunnar Guðni Tómasson, Executive Vice President in Project Planning and Construction. Gunnar Guðni is the owner of the project so the objective of the interview was to get information on the structure and objective of the project as well as answers to more detailed questions. The third interview was conducted on the 31st of March with Valur Knútsson, Chief Project Manager at Þeistareykir. The objective of the interview with Valur was to get the perspective of the senior project manager and obtain answers to all detailed questions.

A questionnaire was sent out to Bjarni Pálsson, Manager – Power Projects Department and Panel of Expert at Þeistareykir. Research and Development Division to obtain information about the developmental stage of the project and to Sigurgeir Björn Geirsson, Project Manager Mechanical at Þeistareykir to get a better insight into the experience of the project managers in the project team.

3.5 Analysis of data

When the interviews had been conducted the information and data was analyzed and summarized in the Excel worksheet. IPMA´s Individual assessment sheet was used to evaluate the project (the individual assessment sheet can be found in the appendix) (IPMA, n.d) the conclusion was gathered on a comment sheet where the criteria were marked as a strength for the project or area for improvements. The results were then evaluated and a score for each criteria determined according to the appropriate scoring table. Three separate scoring tables were used to determine the score for the criteria, one scoring table assessing areas A. People & Purposes and B. Processes & Resources and two for assessing C. Project Results. The project overall performance could then be seen in the summary sheet as the assessment process sheets calculates the final score for all areas, criteria and sub-criteria. The following figure shows a visual presentation of the research process.
4. CASE STUDY

The idea of a geothermal power station at Þeistareykir has been developing for around 20 years. It all started with power companies, nearby landowners and local municipalities. These parties decided to start the company Þeistareykir ehf and initiate research drilling of the area with the objective of providing power for industrial structures in Northeast of Iceland. In continuation of that the company Þeistareykir ehf contacted the National Power Company of Iceland, for their specialty of knowledge and experience in the field of building and operating a power station. (Bjarni Pálsson, verbal reference, April 10 2017).

Now the National Power Company of Iceland is building its first geothermal power station at Þeistareykir. The power station will produce up to 200 Mwe and will provide power for utilization to nearby companies and housing in the area. The first phase of the project will be delivered in December 2017 and the second phase in April 2018. These two phases of construction will produce 90 Mw of power for utilization. A contract was signed in February of 2015 which marked the start of the constructions for the first two phases of the power station. Extensive research and preparation had been made before that time which included: obtaining permits, research and environmental impact assessments, risk assessments, social responsible plans along with other necessary project management preparations.

The National Power Company of Iceland’s objective is to maximize the yield of energy sources for sustainable utilization, value creation with efficiency as a guiding principle (Bjarni Pálsson, verbal reference, April 10 2017). During construction, the National Power Company of Iceland is focusing on safety, environment, sustainability, and being informative to stakeholders and nearby communities.
The organization has a zero-accident policy, where the goal is to avoid all accidents by taking preventative safety actions as processes and procedures, work descriptions, operation guidelines, risk assessments, training, monitoring and registration of all incidents, near miss incidents and accidents.

The National Power Company of Iceland cares deeply about the environment and environmental considerations have been an emphasis throughout the project. Environmental factors are regularly monitored during the project to observe what effect the geothermal utilization can have on the environment. To minimize the impact the power station’s construction has on the environment, landscaping was organized to be finished alongside constructions. For example, seeding alongside the road to Þeistareykir and restoration of land areas. This has been done in cooperation with several stakeholders of the project and the Soil Conservation of Iceland (Valur Knútsson verbal reference, March 31 2017 & Geothermal Power Station at Þeistareykir, 2016).

The National Power Company of Iceland started in cooperation with local municipalities and the University of Akureyri Research Center, the Sustainability Project for the North Iceland in 2015, and now other stakeholders such as Landsnet, PCC Bakki Silicon hf and tourism associations followed and are participating in the project. The objective of the project is to develop indicators which will monitor how the geothermal power station will effect changes to society, economy and environment Valur Knútsson verbal reference, March 31 2017 & Geothermal Power Station at Theistareykir, 2016). Þeistareykir power station is the first geothermal power plant to be assessed under the Geothermal Sustainability Assessment Protocol (GSAP). The GSAP is a protocol that assesses the preparation phases of power plant development and is built on the grounds of the Hydropower Sustainability Assessment Protocol (HSAP). The protocol consists of interviews based on 17 topics (communication, consultation, environmental and social management, labor and working conditions, geothermal resources utilization and biodiversity) and are conducted with stakeholders that have interests in the building of the power station. These stakeholders consist of employees of the National Power Company of Iceland, designers, municipalities, contractors etc. These interviews provide a good overview of how the power station complies with international criteria on sustainable development (Landsvirkjun, n.d). The Þeistareykir geothermal power station project is very successful and is receiving very high scores in the first assessment phase (Valur Knútsson, verbal reference, March 31 2017).

5. RESULTS

5.1 The Comment Sheet

Each sub-criteria of the model were given a score according to the comment sheet in the scoring sheet and the criteria was marked as a strength (S) or an area for improvement (AFI) as seen in the table below. Most of the criteria are a strength for the project, although there are seven sub-criteria where there is an opportunity for improvement, those criteria belong to areas People & Purpose and Project Results.
<table>
<thead>
<tr>
<th>Area</th>
<th>Criterion</th>
<th>Strength (S) / Area for Improvement (AFI)</th>
<th>Total score for criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.1. Leadership &amp; Values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.1a. Role models for excellence</td>
<td>S</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>A.1b. Care for project stakeholders</td>
<td>S</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>A.1c. Orientation towards project objectives and adaptability to change</td>
<td>AFI</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A.2. Objectives &amp; Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.2a. Managing stakeholders needs, expectations and requirements</td>
<td>S</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>A.2b. Development and realisation of projects objectives</td>
<td>AFI</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>A.2c. Development and realisation of project strategy</td>
<td>AFI</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A.3. Project Team, Partners &amp; Suppliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.3a. Identification and development of competences</td>
<td>AFI</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>A.3b. Recognition of achievements and empowerments</td>
<td>AFI</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>A.3c. Collaboration and communication</td>
<td>S</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B.1. Project Management Processes &amp; Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B.2. Management of Other Key Processes &amp; Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.1. Customer Satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.1a. Customer perception</td>
<td>S</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>C.1b. Indicators of customer satisfaction</td>
<td>S</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>C.2. Project Team Satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.2a. Perception of the project team</td>
<td>AFI</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>C.2b. Indicators of project team satisfaction</td>
<td>AFI</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>C.3. Other Stakeholder Satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.3a. Perception of the other stakeholders</td>
<td>S</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>C.3b. Indicators of other stakeholders of satisfaction</td>
<td>S</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>C.4. Project Results &amp; Impact on Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.4a. Realisation of results as defined in project objectives</td>
<td>S</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>C.4b. Realisation of results beyond project objectives, including impact on environment</td>
<td>S</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>C.4c. Project performance</td>
<td>S</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>
5.2 Overall Scoring

The overall scoring for the areas can be seen on the graph below. The area of people & purposes got the total score of 62 points, processes & resources got 78 points and the project results that summarizes the first two received a total score of 75 points.

![Overall score graph](image)

Figure 9. Overall score

5.3 People & Purpose

The People & Purpose area received the average total score of 62 points that divides into three criteria. The three criteria are leadership and values, that received the score of 72 points, objective and strategy received 65 points and project team, partners and suppliers have the total score of 48 points.

![People & Purpose graph](image)

Figure 10. Results- People & Purpose

These three criteria are further divided into three sub-criteria which all have separate scoring points as seen on the summary sheet below. The highest score within the sub-criteria, which was care for projects stakeholders and managing stakeholders needs, expectations and requirements, received 80 points. The identification and development of competence and recognition of achievement and empowerment are the criteria that received the lowest scores within this area with the scores of 45 and 30 points.
5.4 Processes & Resources

The Processes & Resources received the average total score of 78 points which is the highest score of the areas. This area only contains two criteria, project management processes and resources that received 75 points and management of other key processes and resources that received the score of 80 points.
5.5 Project Results

The third area of the Project Excellence Model is Project Results which summarizes the other two areas. This area received the total score of 75 which is the average score of the four criteria within the area.

These four criteria all have separate scoring points which range between 50 and 85 as the graph shows. The summary sheet below shows that the fourth criteria is the only one that has some sub-criteria which forms the total scoring point of 78, for both project results and impact on environment.
6. DISCUSSION

6.1 The research results

The research indicates that the project is quite well managed at all levels. The organization's strategy is visibly used as a guideline in the project and the objective is well known by the project team and other key stakeholders, which is a vital part of achieving project success. The organization is setting a high benchmark in the industry by using new methods regarding environmental impact and sustainability.

The overall assessment score for the Þeistareykir power station project is rather balanced between the areas of the model as the graph below shows. According to these results the project can be characterized as a very process driven project that has a frequent delivery of results. The processes have evolved and improved over the years according to gain of knowledge and experience through regular lessons learned, meetings and by transferring the wisdom to the next project. The project shows good leadership and the project team is motivated and dedicated to deliver great results. These results indicate that the project can deal with complex challenges such as political, social, technical and environmental (IPMA, 2016).

![Overall score chart]

Figure 15. Results - Overall score

The scoring divides between the areas and criteria of the model like the following scatter chart shows. Criteria in area A. People and Purposes had the lowest score of the different areas, other than criteria C2. Project team satisfaction. C1. Customer satisfaction had the highest score, followed by B.2 Management of other key processes and resources and C.3 Other stakeholder satisfaction.
6.1.1 A. People & Purposes

The project’s objectives are formed in the beginning of the project and obtained and monitored regularly during the project lifecycle. The objectives are not developed or changed further throughout the project. Necessary actions are taken to obtain the objectives to prevent project delay and project results are regularly compared to expected results. A thorough stakeholder analysis is conducted during the development and design phase of the project, where the stakeholders needs and demands are clearly identified. Following the analysis, key stakeholders are implemented in the project through appropriate contracts along with a detailed communication plan. Effective processes are in place for communication, execution and management of stakeholders.

Good teamwork is visible in the project. There is an emphasis on good cooperation and communication for everything to go smoothly and to execute a successful project. The chief project manager is an experienced project manager within the power industry, supported by a skilled project team. He seems to have a clear vision of the project and knows it inside out. His management methods have developed through his extensive experience and education in project management. He also seems to have a good connection with the project team where he has created a constructive culture, giving its members space to use their specialty and own methods to enforce their duties and responsibilities. Information meetings are conducted regularly where team members have the option to discuss and get feedback, and support from other team members.
His management skills seem to be achieving expected results and he has received recognition from the customer and local municipality for good communication and clear information on project progress.

**Opportunity for improvement**

In any project, there is always an opportunity for improvement. According to the research results, project management at Þeistareykir could go further than required to exceed expectations by monitoring and reviewing the project objectives during the project process, especially when changes occur. By doing so they could challenge themselves to reach higher and obtain greater results than expected.

Feedback and compliments could be given in a more organized and effective way to the project team and relevant key stakeholders. By recognizing a job well done and giving encouragement when times get tough inspires the employees to reach even further. The model also mentions that in successful projects, project managers take time during the project to review and improve their own competences. To achieve this, it needs to be done in a systematic way.

Lessons learned meetings is a well-known method within the project environment. These meetings are held about once a year with the objective of learning from experience. Meetings like these are an effective way to obtain continuous improvement and reach better results. By implementing this method into the project and using it systematically during the whole project lifecycle there is an opportunity to go further than expected. This can be done by reviewing methods and procedures while still in use, record and document suggestions on what can be done better, instead of recalling the information much later, or at the end of the project.

**6.1.2  B. Processes & Resources**

The National Power Company of Iceland is certified by ISO9001;1400;27000 and OSHAS18001 which provides them with a high-quality standard and processes in the appropriate areas. Therefore, the management of Þeistareykir must follow strict rules and regulations according to these standards, and all contractors, suppliers and other key stakeholders are expected to follow and comply with them. Processes are well defined and structured at every phase of the project and are applied successfully. The processes are continuously improved according to the Deming/PDCA Cycle between projects. The project management at Þeistareykir regularly monitors KPIs, deviations, risk, security, financial etc. which is a sign of an excellent project. During both the development and construction stage a detailed project plan was developed and several analyses were made in order to support the foundation of the project management approach needed. The project plan and the analyses that were made are based on former project experiences and knowledge due to the effort of continuous improvement. All project information and data is documented through a project base to make it accessible to all project members.
Opportunity for improvement

In excellent projects, processes and methods should be reviewed on a regular basis and changed if necessary during the project lifecycle along with involving key stakeholders in the entire process. At Þeistareykir key stakeholders have been largely involved, and all communication and cooperation is exemplary. To achieve even further results and excellence these key stakeholders could be involved in choosing project management tools and methods, give feedback in a formal way that can be used to improve the management and processes continuously. To achieve excellent results management at Þeistareykir, could implement continuous improvement of processes in a more formal way.

6.1.3 C. Project Results

The assessment of the project results is based on the project status at the time of the research. Even though the project has not been completed it is in the later stages of construction and far enough along to estimate that changes made at this point will not affect the end result.

At this stage The National Power Company of Iceland has already sold about 55MW of the geothermal power to a silicon plant which is being constructed in a nearby area. The silicon plant is Þeistareykir’s largest customer and their cooperation seems to have been exemplary during the entire project, with the customer being well informed of the construction progress, with regular site visits. Stakeholders have been engaged in the project since the idea of building the geothermal power station in the Northeast of Iceland was introduced. Their involvement and engagement is essential in all phases of the project in order to succeed in its implementation and to achieve intended results. The customer and other key stakeholders have stated to the chief project manager, and the project team their satisfaction on the project management and cooperation on numerous occasions (Valur Knúttsson, verbal reference, March 31 2017).

The project team is composed with specially chosen individuals, based on their knowledge, expertise and experience, and structured within a detailed organization during the project, each having a clear role. A part of the project team is based at headquarters and others have a temporary base on the construction site during construction, with an opportunity to go home during weekends. Due to these circumstances, there is a focus on making an environment that feels like a home away from home, with management support to respond to situations that might occur in personal life.

The team works well together and the communication and moral within the team is good. The policy and the objectives of the project are clear to the project team and they strive to continuously comply to the objective within planned time and cost of the project. In order to do so the project team has multiple coordinator meetings with the chief project manager, project steering group and resident engineering, along with regular coordinating meetings with contractors. Therefore, the communication and coordination with key stakeholders is extremely good. The project team has multiple indicators which are measured and monitored on a regular basis and compared to the original plan. A majority of these indicators are according to plan at the current status of the project.
The project is quite well known among the Icelandic nation and the fact that the country’s President set the cornerstone to the construction site is a great recognition for all key stakeholders of the project. The event received positive reaction by the media, and is said to be a benefit for the whole nation. This coverage is also a great recognition for The National Power Company of Iceland since it is the organization’s first geothermal power station construction. As stated above, the project has clear and well defined objectives and measurement criteria which are constantly monitored. As this is written, measurement of key performance indicators is almost all according to original plan, and the project in whole is considered a success by the project team and all key stakeholders.

The new methods the project is using to reduce the environmental impact are delivering good results along with a great outcome of the GSAP and the Sustainability project. With these indicators, the project is delivering greater results in these areas of the model than expected. Media coverage of the project is positive due to this emphasis. The project team has during the project discovered new knowledge, including a new drilling method, which will be used in future projects. They will also use the new-found knowledge to enrich the industry.

In accordance with OSHAS18001 the project has a zero-accident policy which seems in most part to be successful. The objective is to have an index of one and at this stage the deviation index is 1,8 which is a pretty good result compared to around 300 employees that work on site as part of the project.

The project is receiving a high score throughout for their new benchmarking projects, regarding new environmental methods and the Sustainability Project. The core of these projects are communication and cooperation of relevant stakeholders. The objective is social responsibility, environmental sustainability, future buildup of the surrounding environment and municipalities along with setting a benchmark within the industry. Therefore, this area and its criteria are a strength for the project according to the PE Model.

**Opportunity for improvement**

Even though the project is on track and considered a success at the current stage there is still room for improvement. Despite what seems to be a well-structured project team, the feeling of some team members is that roles and responsibilities within the team might be clearer. The management and the project team might use encouragement and motivation in a more formal way, and more frequently for recognition. To optimize project performance there is an opportunity to work towards continuous improvements alongside the entire project execution for example by improving processes, management and methods.

In excellent projects, according to the PE Model the monitoring of key stakeholders and customer’s satisfaction is key. In order to achieve this the project team at Þeistareykir could have used regular satisfaction surveys to monitor the business relations, in order to be able to respond to any unknown discontent than could have occurred during the project lifecycle. In addition, the satisfaction of the project team is just as important. For that reason, there is an improvement opportunity to monitor the project team's satisfaction systematically during the project lifecycle and make more room for professional and personal development to assist the project team members to maximize their experience and learning from their participation in the project.
6.2 Criticism of the Project Excellence Model

6.2.1 Strengths

As previously mentioned, the PE Model is well structured and its areas make a strong foundation for excellence, reinforcement and proof of excellence throughout the entire lifecycle of the project. It is an open concept that can be transferred to any project or program independent of its origin or size and can be used to evaluate all stages of the project from the beginning to the end. The model also includes a broad range of criteria giving organizations a guideline to which factors need to be included and monitored without constricting them to a certain tool or method. This makes it possible to benchmark and compare projects between industries, and therefore transfer best practices. Giving them the space to develop their own methods and processes to suit different projects at different times.

The model’s regular review by highly respected researchers ensures that the model is in constant development to strengthen its assessment foundation and maximize its utility. As previously mentioned, the modern definition of project success is not confined only to the factors of the iron triangle (time, cost and quality) but has evolved, considering many other important factors such as, the people involved, stakeholders, environment etc., which the newest version of the model covers.

6.2.2 Opportunity for improvement/Weaknesses

The IPMA Project Excellence Baseline which is the guideline to the model and describes its foundation and how to apply it could be clearer and more user friendly. While researching the model, and applying it to the Þeistareykir project the authors found the baseline quite detailed but missing a simple and clear explanation on how to go through the assessment process. It felt that a more conductive process would have been beneficial, especially for first time or inexperienced assessors. With clear and simple instructions, the baseline could be more of a guide for organizations and project managers which would make it easier and a more accessible tool for evaluating project excellence.

The scoring criteria in the scoring tables could also be clearer and more descriptive. The gap between the scoring categories is in the opinion of the authors too wide and is largely established on a subjective base, which leads to a weakness of the assessment process. The whole process of assessing a project through the model is based on the ability of the assessor, his knowledge, sensibility and experience, which makes him a critical factor in the outcome of the assessment. For this reason, the process can easily be affected by external human factors like, feelings, interpretation, daily mental state of the assessor, and therefore the project assessment result is subjective to human error.

The authors found through their research that some factors were being repeated multiple times within the areas of the model, which made it unnecessarily complicated at times developing the questionnaire for the assessment interviews. It would be easier for organizations and project managers to assess their projects with a more clear and simple guideline for the assessment process. To foster the use of the model within organizations it must be easy and simple to use.
Erik Manson (verbal reference April 19th, 2017), one of IPMA’s most experienced assessor and user of the model states that:

"The new emphasis on sustainability, environment and leadership & people, which are the main new elements are future proof and it will take a while before most projects will be able to live up to those standards (Scandinavian countries leading the way but large parts of the world still lagging by far)."

He also states that

“In evolutionary terms, I hope that the next major update will integrate more of Eastern PM as currently almost all standards (IPMA, PMI etc. are Western based). In this context, it should be noted that the Chinese already had updated the previous PE Model on environment for national awards, which is now integrated into the new model”

IPMA is promoting the model on the grounds of the association's yearly project excellence award which only a number of worldwide projects apply for and spend high amounts of money to take part in the process. By connecting the model to the PE Awards IPMA is limiting its use of the model making it more difficult to identify a large number of excellent projects, since many of them do not apply for the award. This can lead to missing out on benchmarking opportunities and identifying best practices which are being developed around the world. The association should focus more on promoting the model and the PEB regardless to the PE Awards as a contribution to the enhancement of excellent project management around the world.

6.3 PE Model for evaluating project management and organizational performance

The PE Model is inspired by and connected to the criteria of the EFQM model. As previously mentioned the EFQM model is used to assess quality and excellence in permanent organizations with continuous improvements. Organizations that use the EFQM can deepen their knowledge and further improve performance by using the PE Model to achieve excellence in project execution and delivery and can at the same time strive even further to achieve overall excellence by transferring the criteria of the PE Model on to the organization.
Figure 17. Mapping between PE Model areas and EFQM criteria (IPMA, 2015)

The authors see no obstacle for using the model as a self-assessment tool for evaluating organizational success for permanent organizations. Neither the model itself, nor the criteria would have to be altered. Combining the use of these models is a preferable choice in order to achieve excellence both in managing projects and organizations. The PE Model could be applied without substantial changes even though it would be preferable to simplify the assessment process as formerly mentioned.

There is an opportunity here to build a whole new framework around an organizational self-assessment process but still using the great foundation which IPMA has built around the IPMA Project Excellence Model.

6.4 The future of the Project Excellence Model in Iceland

The concept of project management is relatively new in the Icelandic work environment, even though it has been widely used for quite some time. For the past few years the professional project management approach has become much more visible, and many organizations, both private and public have implemented the methodology and have therefore become more project orientated.

With this in mind, there is an opportunity to further evolve the project management approach in Icelandic organizations. Even though the project management concept is still relatively new, many organizations have increased their project management maturity in the past years and might be willing to go even further and try using new tools to increase their knowledge and performance.

The case study results show quite a mature project management execution and the opportunity at hand by increasing results and possibly achieving excellence with the help of the PE Model. If applying the model to Þeistareykir project was successful there is no reason but to assume that such results could be achieved in other Icelandic organizations. In this light, the authors see no reason to think the model could not be used successfully in many Icelandic organizations.
7. CONCLUSIONS, LIMITATIONS & FURTHER RESEARCH

There is no one common definition of success for it varies between projects and organizations along with how the project team and key stakeholders experience success. Success, or even excellence, is always the objective and focus at the initiation of any project. There are several models and frameworks that can support project managers and organizations to achieve excellent performance and results.

The purpose of this research was to evaluate if the Project Excellence Model can be used as a tool to achieve excellence in projects and project management and be useful to elucidate the critical factors in project preparation and management in Icelandic projects? The PE Model is a suitable tool used to achieve excellence in project execution and management and has been used in that sense by IPMA’s Project Excellence Awards assessors. As the case study of Peistareykir shows, the model is suitable to assess projects outside of the award process and if correctly used can help with continuous improvements and help organizations to achieve excellence in their projects. The research results of the case study imply that the model covers critical factors in project preparation such as involving stakeholders in the process in the early stages of the project in order to respond to demands and implement good communication. The model can function as an iteration for continuous improvement of processes, methods and tools throughout every phase of the project during the entire project lifecycle. The model could also encourage the project team to continuously work with lessons learned in order to enhance performance in achieving excellent results. With that being said, it is important to have in mind that many other factors need to be in place in the organization that support the function of the model such as engagement of top management, culture, key stakeholders among other things.

It was also an objective of this research to reveal How the case study of Peistareykir revealed the strengths and opportunities for improvement of the PE Model? The case study was a learning opportunity for the authors to evaluate the application of the model and the assessment process through their own experience, shedding a light on the model’s strengths and opportunities for improvement. As formerly mentioned, the model’s strengths are its openness and broad range of criteria providing organization and project managers a tool that can be used as a guideline to benchmark best practices in achieving excellent performance and results. By making the model more accessible and the assessment process and scoring table clear and simple, the model and its processes would be more user friendly and easy to foster within organizations. Along with sheering the experience of organizations using the model making the literature foundation stronger.

The literature foundation of the model is weak since little has been written about how the model is applied to projects in order to enhance performance and continuously improve project excellence which was a challenge in the research process.

A limitation to the research is that the authors have not received the proper assessment training as IPMA demands from its assessors and therefore are not fully trained to apply the model like experienced assessors are. The authors are applying the model for the first time as well as developing their own assessment method. This might have influenced the assessment results. The authors were aware of this fact but the authors have
a good foundation in project management and prepared in the best way possible by undertaking assessment webinars and studying the Project Excellence Baseline.

Further empirical research is recommended to strengthen the foundation of PE Model. In addition, extensive case studies are needed where projects are evaluated and compared to benchmark best practices of the assessment process and how successful the actual application of the model is.

8. ACKNOWLEDGEMENT

We would like to express our gratitude to our two superb supervisors Dr. Helgi Þór Ingason and Þór Hauksson for their encouragement, support, feedback and time they have contributed to this thesis. We are grateful for the support Landsvirkjun showed by supplying the project Þeistareykir as a case study and their valuable employees for taking the time to share their knowledge and experience about projects, project management and the Þeistareykir project. These thanks go to Ásbjörg Kristinsdóttir, Gunnar Guðni Tómasson, Valur Knútsson, Einar Erlingsson, Bjarni Pálsson and Sigurgeir Björn Geirsson. Special thanks to Erik DelEtoile for proofreading the thesis.

We would like to show our appreciation to IPMA, Ewa Bednarczyk and Pau Lian Staal-Ong at IPMA for allowing us to take part in the introduction of the PE Model and the training of the assessment, along with providing and sharing both official and unofficial data about the model and the assessment process. Erik Månsson gets some special thanks for providing valuable information about the model and its literature ground.

Special thanks go out to our wonderful families for their encouragement, support, understanding and endless patience during these two years of MPM studies and the writing of this final thesis.

Finally, we would like to thank our fellow MPM-2017 students for a wonderful and spectacular companionships during these two years of the study, we reached our goals together with determent vision and objectives and the values of unity, enthusiasm and joy as a beacon.
9. REFERENCES


10. **APPENDIX**

Below is the unofficial Project Excellence Assessment Process: Individual assessment sheet which was used to analyze data from the research.