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Benefits of portfolio management systems

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ABSTRACT

In modern today's world and in last decades, the world of business is getting smaller and companies are moving faster. The company's area of work is worldwide in many cases, due to globalization, new technology and fast transportations. In this paper the objective is to analyze how PPM is handled at present time in a few companies in Iceland. How they are managing their project portfolio and what they are using to do so. If they are using some systems or tools, what kind of procedures and what is in their opinion are benefits of good, reliable Project Portfolio Management System.

As it turns out PPM seems to have still a long way to go and is in some cases in infancy stage in half of the researched companies most have no specific system to manage their portfolio and most regard the Project Portfolio as some kind of Project registry. Still there is a lot of interest to do better and gradually organizations will move towards proper PPM using computer systems to handle the input needed to manage a good Project Portfolio. And with that to benefit from the advantages that comes with it for executing corporation strategy and projects in most efficient way possible.

1. INTRODUCTION

Project portfolio management (PPM) is a complex undertaking in any organization and especially in large international organization. A right utilization of resources and with often conflicting agent from stakeholders are often the key contributors in the complexity. Data can be difficult to handle and reporting on projects statuses can come from many directions, especially with programs that can have many parallel projects with many project managers and team members. In large organization it may be critical to hold this all together in a good system to be able to manage resources correctly and be able to react when things are not going as planned or some urgent incidents need to be tackled.

> Good project portfolio management (PPM) is becoming a key competence for companies handling numerous projects simultaneously(Killen et al., 2008). A project portfolio is seen as a group of projects that compete for scarce resources and are conducted under the sponsorship or management of a particular organization(Archer & Ghasemsadeh, 1999; Dye & Pennypacker, 2002). Existing approaches focus on describing what project portfolio management comprises or should comprise. They address the processes, tasks, tools and instruments of PPM. This is of course a necessary clarification but is by far not sufficient. Without analyzing who is responsible for the newly arising issues and how the key actors should cooperate and cope with their tensions, project portfolio management can neither be understood nor be implemented successfully.(Jonas, 2010)

Many companies in today's business environments are operating on world market with many partners here and there big and small. In these circumstances it is critical for executive management and portfolio managers to have a clear view of what is going on where urgent matters need some reaction, and to see in as much time in advance as possible where problems may arise in long and short term. In today's business environment things can change quickly and sooner they are noticed the better. If a good PPM system is in place and accessible to all projects in a standard and easy manner to be implemented it is of high value for executive and managers to be able to react in good time to keep project on schedule, on budget and to fulfill all of stakeholders requirement. A good PPM system can also lead to better quality data about how projects are developing, and that data can be analyzed better in retrospective.

The objective of this paper is to analyze and evaluate challenges organizations are facing in their project portfolio management in this case in Icelandic environment what system, procedures, or methods they use in their project portfolio management. A few companies in Iceland have been picked out for research on how they handle their product portfolio management, they have been selected mainly because they are large and complex and have many ongoing projects ongoing at the same time. Intentions is to investigate how they are handling their portfolio of project and what they think is good, what could be better and what they see in the nearest future, if that information is available. As well analyze the difference between how management is between the companies and if the quantity, size and business area difference play some role of how things are handled. It is quite clear that these organizations are handling PPM in different way and have formed their own way and procedures to handle PPM, some may have systems dedicated for this other do not. The research in this paper is though limited to a few organizations to have a better picture a larger set of organization would have to be researched.

The research questions are split into the following sections.

Personal Profile.
Organization profile.
What are the benefits of Project Portfolio management systems?

2. LITERATURE REVIEW

In this chapter, objective is to point out importance of project portfolio management (PPM). Why a good portfolio management will improve project selection process, lead to more informed decision making, gives better view of the big picture, will encourage collaboration over competition, make more efficient use of resources, gives more accurate project performance data, reduce risk and increase project deliveries on time. This will all help organizations to achieve better returns and reach their strategic goals.

> Effective strategy consists of choosing to do the right thing. Effective execution means doing those things right. Strategic execution results from executing the right set of strategic projects in the right way. It lies at the crossroads of corporate leadership and project portfolio management- the place where an organizations purpose, vision and culture translate into performance and results. There is simply no path to executing strategy other than the one that runs through project portfolio management.(Morgan et al., 2007, p. 4)

What is PPM

In ICB4(*ICB - IPMA Individual Competence Baseline Version 4.0 Nijkerk*, 2015), PPM is described in this way:" A project is a set of projects and/or programs , which are not necessarily related, brought together to provide optimum use of the organization`s resources and to achieve the organization`s strategic goals while minimizing portfolio risk."

PPM is a management technique used to align and control group of projects in line with objectives and benefits to organization. There are three main central objectives to PPM:

- Strategic alignment
- Centralized PPM structure balancing across projects, in terms of important parameters like resources and risk.
- Value maximization, in terms of organization objectives(Petro & Gardiner, 2015)

The managerial activities related to PPM are the initial evaluation, screening prioritization of project proposals, the concurrent evaluation and reprioritization of individual projects and the allocation and reallocation of shared resources(Blichfeldt & Eskerod, 2008; Jonas, 2010) These management practices are exercised by decisions by portfolio owners and managers, portfolio management board meetings or portfolio management offices (PMO). PPM tries to answer project related questions like: "What should we take on? What should be terminated? What is possible? What is needed?"(Dye & Pennypacker, 1999).

Why PPM

If an organization has multiple strategies that seems to ask them to execute them all and every projects equally, trying to do all things for all people, often the companies end up being mediocre for some at best. In a world of limited sources, it is as important to know what not to do as it is to decide in which strategies and projects to invest in. What makes one company excel and others not, is that they have discipline to engage in a strategy with a tailored portfolio of projects that will reach their goals and bring out products that are better than their competitors. This is called engagement in the appropriate project portfolio, It directs the limited resources of time, money, equipment and people to the right mix of projects and programs (Morgan et al., 2007, p. 141).

Portfolio Management

A managerial definition of PPM has been presented by Blichfeldt and Eskerod(2008), who described the "managerial activities that relate to the initial screening, selection and prioritization of project proposals, the

concurrent reprioritization of projects in the portfolio, and the allocation and reallocation of resources to projects according to priority" (p. 358). By following this definition based on process-oriented understanding of PPM the managerial aspect can be split into three stages; Portfolio Structuring, Resource Management and Portfolio Steering(Beringer et al., 2013).
In each stage different set of skills is required and the participants change between stages.

1. *Portfolio Structuring* requires all initial activities that are involved in building a company portfolio given business strategy(Meskendahl, 2010) includes portfolio planning, evaluating project proposals, selections of projects. These activities need to be done recurrently in alignment with the company strategic planning cycle(Platje et al., 1994) with the most accurate data that then exists
   "Portfolio planning processes often take place with less than perfect data. We can never plan past the horizon of our knowledge; however, we can plan out to that horizon and re-plan as we gain more information. The limiting factor of the process is the accuracy of the information used. "(Morgan et al., 2007, p. 169)

2. *Resource management* is connected to recurrent resource allocation in portfolio structuring and needs to be constantly reallocated in portfolio steering. The aim is to effectively and efficiently allocate resources for projects across the entire portfolio.

3. *Portfolio steering* is the biggest activity of PPM, it is continuous coordination of activities of portfolios. It involves information gathering for continuous monitoring of strategic alignment in case it would deviate from the target portfolio. And in that case to develop corrective measures, coordinating projects in the company to identify project synergies and detecting and stopping obsolete projects(Loch & Kavadias, 2002). Furthermore, it includes facilitating projects to increase projects success rate and minimizing and controlling risk in a portfolio. It is also important to align the planned portfolio with real portfolio and replan projects and programs frequently in dynamically changing environment.

Strategy execution

What every organization is doing is de-facto its real strategy, and can be identified in the projects it decides to invest in. Successful strategic execution requires aligning the project portfolio to the corporate strategy. It is called the engagement domain, where the objectives of strategy meet the constrains of resources. Every project either contributes to successful strategic execution or sucks the resources away from others that would. (Morgan et al., 2007)
A project portfolio is different from programs or large projects in the way that its projects need not to have a shared strategic goal, but simply compete for the same resources(Turner, 2009).

Portfolio risk management

As Organizations operate on a highly dynamic markets with constantly changing environment, and changing customer requirements, demands that organizations must implement risk management practices to be flexible, to be able to react quickly and keep good quality in their product.
In one single project, risk management deal with cost, time and quality objectives. Management within project portfolio deals with implementation of the right projects, alignment of them to strategy and the balancing of the project portfolio.
In a project portfolio, dependency between many projects trigger new risks in addition to a single project risks and therefor single project risks is insufficient in the context of portfolio risk management.
A portfolio-overall risk management approach is the best solution for managing risk in a portfolio, because it can facilitate the adjustment of resources among projects and take into consideration interdependent risks between projects in a portfolio. Portfolio risk connects information in all projects with in the portfolio and gives there for better collectively overall risk management(Teller, 2013). Which means that if one projects fails, is delayed, or runs over budget and depletes resources, it can seriously affect other projects within a company portfolio.

Portfolio Steering Committee

In governing project portfolios are different actors in the organizations it is portfolio officers, executive members, project managers and others that can make up the Portfolio Steering Committees sometimes also called Portfolio Review Board, Project Portfolio Group or the Portfolio Board (PB). The participants in this committee should be key organizational stakeholders, but also important is the presence of sponsor or owner of the committee. This committee plays regular role in portfolio governance. There are three different roles that the portfolio committee may play in portfolio governance:

- Communication and consolidation role.
- Negotiation role.
- Decision making role

This committee general role is described as decision making bodies, who meet on a regular basis to review the portfolio and make decisions including screening projects at gates, prioritizations, selection or termination of projects. The frequency and duration of the committee meetings has considerable impact on the purpose and meaning of PPM meeting(Mosavi, 2014)

3. METHOD

The objectives of this research are to explore the benefits of project portfolio systems and find out how companies are administering on multiple projects within their organization and sometimes for outside clients as well. Companies that deal with multiple projects that are going for the same strategic goals and that are very often competing for the same resources. Much research exists about project portfolio management, this one is focused on organizations\companies in Iceland that are of considerate size and have a big market share or have relatively large operations in terms of projects and complexity.

In this research an interview with five organizations is conducted, and they can be split the into 3 categories, that is: financial organizations, infrastructure construction in public are and innovation and manufacturer for worldwide market with home base located in Iceland.

Research methodology

To collect data for the research, a qualitative research method was used to explore and get insights from project managers with many years and extensive knowledge of the subject of project portfolio management. With an interview conducted with a remote meeting software in this case Microsoft Teams (due to the Covid-19 situation Each interview was recorded in informal style in-dept and semi-structured with list of predetermined questions and auto-recorded and transcribed later on, leaving space for the interviewee to shape the content and subjects of the conversation provided in-depth and additional information(Longhurst, 2009), (Sigríður Halldórsdóttir ritstjórn, 2013)

The 5 interviews were conducted in a 10-day period from 7th May to 14th of May.
Interviews were conducted in three different sections and lasted from 30 minutes to one hour and were made in full confidentiality. All the interviews except one were recorded. Questions were prepared in advance to the interview (the list of questions can be found in the appendix). The first section was about the personal profile and the organization that the person was working in to have basic information about the interviewee and some sizing of the organization he or she was working for. The second part consisted around the fixed questions that was given to the person before the interview, where the interviewee could express his thoughts about them. The third part was to give the interviewer free speech to give his view about the subject and give any other opinion that was not mentioned in the fixed question part, that he or she thought was important.
Given this limit number of interviews it is important to note that the outcome has very clearly not statistical relevance. However, could give an insight into the status indication of the research question

4. *RESEARCH RESULTS*

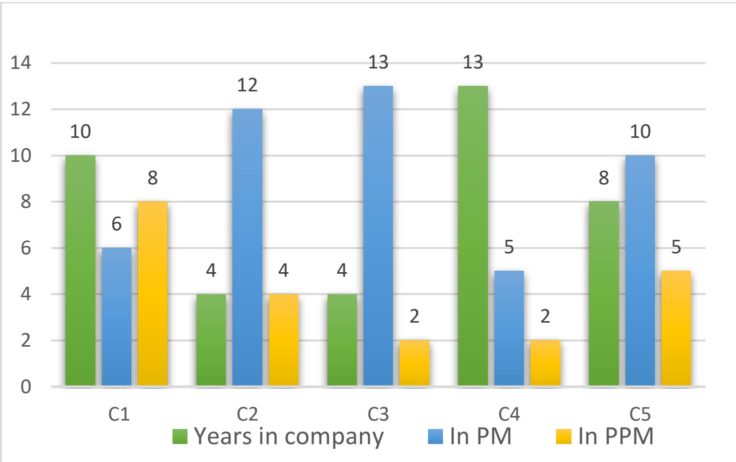
In this chapter the results from the interviews will be presented. Of 7 companies total contacted in request for interview, 5 responded and were willing to give interviews for this paper.
This chapter will be structured in the same way the sections in the interviews.

- Personal Profile
- Organization profile
- Benefits of Project Portfolio management systems

Personal Profile
In this section, the aim was to get some background information about the interviewees and their experience in the field of project management and PPM, and what position they have within their companies, for how many years they have worked in this field and in the company that was investigated.

Most of the interviewees had well over 10 years of experience in Project Management and Project Portfolio Management or average of 13,4 years. Four of them had master's degrees, one had Master in Project Management. All except one were directors of the project portfolio in their company, average years in PPM was 4,2 years. All except one of the interviewees had been working ass project managers before they joined their current company or at average of 9,2 years. All participants in the interviews had a position of Project Portfolio manager or were directors over project departments, and were working solely in that area.

Graph 1 - Personal profile in years

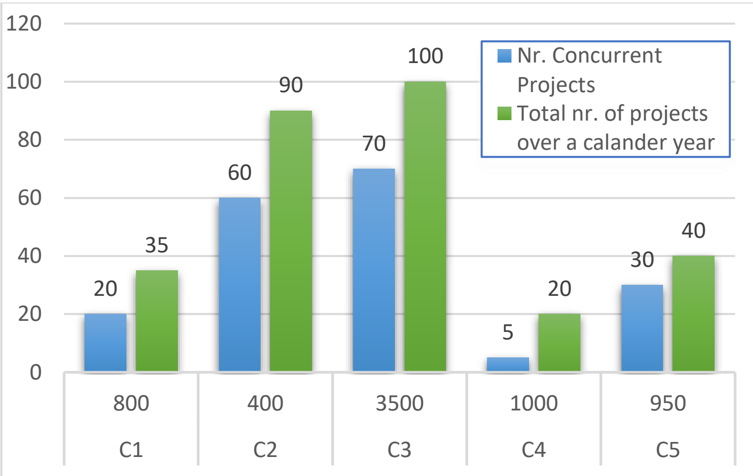


Organization profile

In this section the size and number of projects of the company was estimated be the interviewees. Number of projects matter in the respect of resource, effort to maintain data and how many persons need to maintain project portfolio. This can determine how much effort and investment organizations are putting into PPM.

In graph 2 the estimated number of projects in each company is shown. In this number there is missing data concerning number of external companies or workers who might be working on these projects. These numbers can also be different in companies from time to time and the method in which they are counted could be different. Also, some of the companies have many projects that can take several years to complete others not, in these companies the size or magnitude of projects and programs are very different. This could play a big role as while some have many small projects others have fever and bigger that are rather large programs which could have a project portfolio of their own.

Graph 2 – Companies and number of employees versus number of projects.



Benefits of Project Portfolio management systems

In this section the results from the interviews will be analyzed. Answers for each question will be summarized.

First a summary on how different companies are managing their project portfolio. It was surprising that only two of the companies were using some specific computer system to manage their portfolio.

The first company had built a system up from several components that were partly home build with Microsoft Sharepoint, a specialized PPM system “Keyedin” that had been implemented and then used Microsoft Power BI boards for reporting, to have a summarized hight-level view on their ongoing projects for upper management. The implementation of this setup was not easy and required a lot of discipline and took lot of resources to build.

Second company was using Jira system with some additional modules for project management and a system called Workpoint for PPM that is implemented on top of Microsoft Sharepoint. This setup has been problematic for the company as not all projects are well suited to be operated within this setup, although for other projects this has been working well.

One other company, the portfolio manager was wanting to do something similar but had not been able yet to implement such a PPM system, neither time nor budget had allowed that to materialize.

Other companies within this research are using Microsoft Excel for the PPM and that was specially programed and shared or distributed and manually updated, The Portfolio managers concluded that it was sufficient although all agreed that a better system would have some benefits.

All of the companies have developed a project management procedure for how to manage projects, and in many cases a specific Project Handbook for documentation and how to manage and plan projects. Most of the companies were also using some software to manage their projects, like Jira or Microsoft Sharepoint.

All the companies manage the portfolio with scheduled meetings and with a project board, that reviewed all ongoing projects, where projects were prioritized according to companies' strategy or business goals, with new project selection process or rejection of projects. This was usually done on many levels of the companies. At department level, specific domain level and at executive level. Most of the companies had Project management office (PMO) sometimes in different departments, that had projects managers having control and oversight of all projects and reported to upper levels and the project board. These meetings were held normally several times a year quarterly, bi-annually, or annually, depending on what level they were. The project selection process was very different between the organizations that are in this paper and could be a research on its own, this is due to the nature of the organizations are different, some private others in public service area.

What are the benefits of project portfolio management system?

In this question interviewees were asked to name 3 main benefits of what a PPM system could bring to their organization and why. Most of the participants agreed on few benefits but there were some differences in their answers. Below is a list of the main benefits named and they are in the order that was considered the most important benefits and was most mentioned.

- Overview of all projects, location of all information and status of projects for all stakeholders. Was one of the key benefits of an PPM system by all interviewees, to be able to see the big picture. System like that would also be able to have a retrospective of all finished projects to learn and document what could have been done better and increase quality in handling and closing of projects.
- Resource management, this was mentioned by every company that a control over resources and being able to see for the whole portfolio what resources were occupied or being used and to be able to predict future needs in that respect, where resources were missing or occupied in other projects, that is in terms of persons, equipment, finances and etc..
- Prioritization, most interviewees emphasized that a PPM system would help them and managers to know where to prioritize and align with strategy and business plans and goals.
- Risk management, to be able to manage risk across project portfolio in connected projects, not only on single project level.
- Projects dependency, overview of where projects are connected by dependency or resource wise, gives opportunities for collaborations for similar goals.
- A good PPM system assists executives to make decisions, having better overview of the big picture.
- Ensures communication and sharing of information.
- Balance of projects, makes smaller project visible so that the bigger ones will not take up all resources. Small projects often have what is called a low hanging fruits or quick wins, that are often shadowed by bigger projects. PPM can show opportunities that otherwise would be hidden.

Does portfolio management help your business to reach business goals and financial goals of your company? Then how?

The general answer here was yes, it helps executives with prioritization of projects where to put resources in the right places like people and finances, to meet objectives of the organizations.
This question was not equally important for all interviewee's because organizations are different and definition of profit and success is not the same for every company, but all have some goals that are common to all, like good use of resources and to finish projects on time and budget.

Does project portfolio management increase collaborations or competitions between projects/managers within your company, how, why, and when?

Most of the interviewees did agree on that it did both, that in the selection process and prioritization of projects. Where departments, project leaders and stakeholders were competing for resources there was competitions to have their projects but first. Then after decision on projects and their prioritization was set to reach the goals and policy of the company. Then the PPM helped with collaboration between project members and people are ready to jump onboard of what was decided.

In your view what is the value for executives of the company? and what can executives do to support or promote proper PPM in your organization?

All interviewees agreed that if would be most beneficial for executives to have a good and solid overview on ongoing projects with clearly represented status and assurance on the accuracy of such data. Also, to collect lessons learned so they can be used when new projects are started to make sure that the same mistakes aren't repeated thus lifting the maturity of project management in each cycle. To further extend the value of a good PPM function, executive need to understand what a fully functional PPM can bring to the organization in maximizing resource utilization and making sure that the right skillset is being used for project activity. Where the ultimate goal is to run better projects.

What off the following statements about PPM in your opinion, do you agree or disagree with and to what level?

Lastly in these questions for interviewees was a series of statements about PPM, and they asked to agree or disagree with them. And the results are shown in table 1 here below. These are all good statements about PPM and not surprisingly reflect a bit on the benefits that interviewees considered 3 best benefits, though not totally. The last 2 columns in the table are maybe unnecessary and could have been omitted. The item number 2 seems to have the most agreement then items 1, 7, 8,6,4,5 3 and lastly 9, but no one of the interviewees mentioned ROI as there top 3 benefits earlier in the questionnaire.

Table 1 - Answers to list of statements about PPM

	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
1. PPM Improves projects selection process.	XXX	XX			
2. PPM gives better view of the big picture (long and short term)	XXXX	X			
3. PPM encourages collaboration over competition		XX	XXX		
4. PPM stimulates more efficient use of resources	X	XXX	X		
5. PPM give more accurate project performance data		XXX	XX		
6. PPM increases timely project deliveries	X	XXXX			
7. PPM decreases company/projects risk.	XXX	XX			
8. PPM increases informed decision making for managers	XXX	XX			
9. PPM increases return of investments (ROI)		XXX	X	X	

5. DISCUSSION

PPM systems

In this research it was surprising that only one organization of five had fully implemented PPM system, one had some system, but it was only used for few departments because it was considered a bat fit for large part of the company or there was not consensus in how to use it. Two other portfolio managers wanted to introduce some PPM systems to their companies but had for many reasons not been able to do so. I in one case something had been tried but failed because of directors did not find common agreement in implementing a system. In the other case a company with one of the most projects in this research there was willingness to do that but because of resource and budget reason it had not been done. Last interviewee found reasons not to do it because of the organization of the company, as it had separate project portfolio in every of the 7 domains that the company was split into. Still said it could be possible with some major changes in the PPM culture of the company.
Maybe the size and nature of business matter in deciding to implement a PPM system. There is considerable effort needed to do this properly, companies need to show a lot of discipline to do this and this needs to be fully supported from top levels and encouraged by top executives. Organizations in Iceland are mostly made of rather small or medium sized companies and are possible to understaffed or too weak to be able to launch such an effort. There are still a few companies that are large and are operating on worldwide scale that this would become a necessity to be able to control and to have overview of all projects. In discussion with the interviewees the general feeling was that a very few companies in Iceland have implemented a specific PPM system and if they have it is only for part of the business.

Maybe the maturity in PPM in Iceland has simply not reached this stage, in many cases interviewees discussed what the Icelandic word for project portfolio which translates into project registry meant really. And thought that there should be an effort of finding a better translation for Project Portfolio.
This study also suffers from lack of data, more companies would be necessary to be researched to get a better picture of the status currently in Iceland on these matters.

PPM status in Iceland

Among the interviewees there was considerable interest in PPM, all the organizations except for one have a PPM in place and there is considerable effort put into doing management on this subject. Most of the companies had certain procedures and project handbooks that was partly used to support PPM, there was though in some cases a lot of room for improvements. The procedures in place were mainly to help with Project management in general. All companies had Portfolio Boards(PB) or Portfolio Steering committees and project managers in PMO only working in Project management, still there was difference in the overall organizations between the companies, which is maybe explained that these companies were all operating in different business areas.

Personal profile of interviewees indicated that these managers were all well-educated with extensive knowledge and experience on PPM and were looking for opportunities to do more within their organizations. On the other hand, there was an indicator that the limiting factor to how much was emphasized on PPM and how much effort was put into implementing it, was the organization size and the number, scope and magnitude of the projects that was in their portfolio.

It could be a good idea to do a research on how far Icelandic companies are in PPM and how they are organizing themselves and take into that research a larger set of companies of different sizes, large and small enterprises.

PPM benefits

In the discussion about PPM there was a consensus about what was the benefits of implementing it among the interviewees, though some thought there could be more done with in their companies.

Overview of all projects with accessible fresh information was the most talked about, to help with decision making and being able respond quickly to problems. Resource management was also important, indicating that benefits of eliminating waste of resources, due to resources being used in projects that should be canceled due to they were not producing towards strategic goals or business plans for the companies was added value, additionally there was discussions about resources that were potentially being used in pet projects that were ongoing not registered and not providing any benefits to organization.

Project selection process and portfolio risk management is something that was important to interviewees and to their Portfolio board. With out going into to much details, these were the factors plus resource management that was most useful to the project steering and selection process. These topics would be a good material for further research in Icelandic organizations.

6. CONCLUSIONS

In the small set of organizations that were researched in this paper the topic of PPM was normally highly regarded but was though not properly implemented in the organizations and in this set of companies all of them are rather big on the Icelandic landscape. Some of the beneficial Project Portfolio balancing tools that could be implemented were therefor missing for the steering boards to use to successfully getting the benefits of PPM. Only one company had successfully implemented a PPM software system and the other ones either wanted to or had done it in some parts of their organization.

All of the interviewees acknowledged still the benefits of properly managed Project Portfolio and what it could bring to the organization. To implement this into good PPM software system seems to be out of reach for most of these companies, executives should show faith in the Project Portfolio process and trust that it will give them great benefits in the long run. By having a well-balanced Project Portfolio system, the benefits would greatly outnumber the effort and resources that would have to invested into such a system. It would help these companies to reach their strategic goals by saving resources, cost, keep projects to their timeline and eliminate projects that do not produce.

To go further with this paper a bigger set of organizations would need to be researched, and it would be interesting to do further research on PPM management in general including senior management. Portfolios are treated differently with in every company depending on there area of operations, so it could be interesting to investigate organizations that are in same sector of business, to get more details about the way companies are handling PPM.

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9. APPENDIX

Below is the list of questions which was used as guidelines in the interviews.

Research question:
What are the benefits of project portfolio management (PPM) system?

Personal profile
- Your personal background?
- What is your current position at your company?
- How long have you worked at your company?
- What is your function regarding project/portfolio management?
- How many years have you worked in project management?

Organization profile (give approx. numbers)
-Name?
-Number of employees?
-Number of concurrent projects?
-Total number of projects over a calendar year (2019)?

Benefits of project portfolio management system.

-What are the benefits of project portfolio management system? Name 3 main benefits, how and why?

-Does portfolio management help your business to reach business goals and financial goals of your company? Then how?

-Does project portfolio management increase collaborations or competitions between projects/managers within your company, how, why and when?

-In your view what is the value for executives of the company? and what can executives do to support or promote proper PPM in your organization?

What off the following statements about PPM in your opinion, do you agree or disagree with and to what level?
Answer following questions with: Strongly agree – Agree - Undecided – Disagree - Strongly Disagree

1. PPM Improves projects selection process.
2. PPM gives better view of the big picture (long and short term)
3. PPM encourages collaboration over competition
4. PPM stimulates more efficient use of resources
5. PPM give more accurate project performance data
6. PPM increases timely project deliveries
7. PPM decreases company/projects risk.
8. PPM increases informed decision making for managers
9. PPM increases return of investments (ROI)