Is benchmarking an effective tool for improvement in project management?

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Abstract

Nowadays the world changes at an astonishing pace as a result of the flowing technological changes and the demands for innovation, quality and speed all at once. Organizations have to constantly adjust and realign in order to move forward. “With intense competition in industry today, simply meeting or beating past performance will not result in the level of improvement necessary to remain competitive” (Harrington, 1996). J. Harrington continues by adding that benchmarking is to be considered a powerful tool that can assist businesses to embolden their abilities and know-hows.

The main goal of this paper is to answer the question if Benchmarking can be considered as an effective tool for improvement in projects. In order to do that the author presents literature research going in-depth into what is benchmarking and how benchmarking can be used in project management, how to define the appropriate areas to benchmark and what are the best metrics to be used.

In order to get more accurate and cohesive result, the author continues the research by conducting a survey, which examines benchmarking through the eyes of 21 project managers who were randomly selected representatives of different companies, such as Scania, Tieto Sweden, Andritz, TeliaSonera, Erasteel Kloster, Sigma IT&Management, Syntronic Group, FS Dynamics, GKN Driveline, Ovako and others. The survey will reveal what kind of difficulties they face, once they decide that they are going to use benchmarking as a tool for improvement in projects and how it is decided what to be measured.

The study finishes with a summary of the findings and conclusion.

Keywords: Benchmarking, Project Management, Best Practice Benchmarks, Benchmarking Metrics
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1. Introduction

Benchmarking is referred to as “the art of finding out, in a perfectly legal and aboveboard way, how others do something better than you do” (Main, 1992). He explains that by replicating the techniques of others one will most probably improve. Main continues by adding that benchmarking is also known as the process that “measures by products, projects, services and operational practices of ones organization compared to the performance and operational practices of a selected sample group”.

Rahimi and Tavassoli (Rahimi, Tavassoli, & Mollaee, 2009) explain that when companies decide to benchmark the finest in the business they often experience outstanding achievements and enlarge their organizational borderlines. They highlight that benchmarking can considerably improve the performance of managing companies and similar development can lead in the performance of managing projects. (Rahimi, Tavassoli, & Mollaee, 2009)

Sally Parker (Parker, 1996) points out that the ones who decide to benchmark “do not have to reinvent the wheel” and can concentrate on improvements and upgrades. Rahimi and Tavassoli (Rahimi, Tavassoli, & Mollaee, 2009) echo that and continue furthermore by adding that benchmarking at first sight might be mistaken for a copycat. The authors conclude that this could be proven wrong. Moreover benchmarking is a process that allows organizations to improve based on existing ideas and inspires an “external view to ensure the correctness of setting objectives and developing the internal actions necessary to achieve those objectives”. (Rahimi, Tavassoli, & Mollaee, 2009)

The authors continue by highlighting that Project Benchmarking can provide comprehensive information about the progress of the project. It identifies the goal and can assist to accomplish 'best-in-class' project management. (Rahimi, Tavassoli, & Mollaee, 2009)

Brian Harrison (Harrison, 2003) challenges the idea that Senior management needs to be aware of precisely how good their companies are at delivering projects and even more vitally, at understanding the resultant benefits. In particular, he suggests, they should focus on the knowledge of
“whether, where and how, they can improve, especially in comparison with their competitors” (Harrison, 2003). Despite this desire to expand the certainty of benefits, Harrison (Harrison, 2003) comes to the conclusion that delivery and greater efficiencies in project costs and timetables, limited attention has, so far, been paid to measuring the efficiency of an organization’s project management capability.

A survey conducted by the University of Bradford (ZAIRI, 1995) discovered that benchmarking as a tool for competitiveness has become quite common around the world. Based on the survey’s results benchmarking has been used in one-way or another by over 60% of the firms across all sectors. Zairi and Pervaiz (Zairi, 1999) claim that despite there hasn’t been a particular definition of benchmarking, there is enough evidence to suggest that at least in usage benchmarking has reached a certain maturity level. On the other hand they stress the fact that there is very little proof of how effective benchmarking truly is. (Zairi, 1999)

1.1. Research question

The overall aim of this research is to answer the question if benchmarking can be considered as an effective tool for improvement in project management both in theory and real life. Furthermore it explores how to choose which areas of projects to benchmark and how to define the metrics in benchmarking.

1.2. Research goals

The major goals of this research are:

1. Review literature findings on the subject of benchmarking and its connection to projects; explore different methods and metrics for measuring effective benchmarking.
2. Present and analyze the real-life experience of 21 project management representatives with benchmarking in project management.
2. Methodology

The goal of this research is to examine if benchmarking can be considered as an effective tool for improvement in projects. First the study will review the existing literature on the topic of benchmarking and its connection to project management. Secondly an online survey is designed in order to validate the theoretical findings and explore project managers’ real-life experience with benchmarking in projects.

2.1 Research Method

It has been a while back when Samuel Sieber (Sieber, 1973) valued the complementarity between case studies and surveys. Robert Yin (Yin, 2004) has the general belief that “different research methods serve complementary functions”. Based on the findings of Robert Yin (Yin, 2004) case study is to be considered appropriate method when the research addresses descriptive question like “what happened” or explanatory question like “how or why did something happened”. He continues by adding that if one would like to look deeper an answer the question of “how often something has happened “, a survey would be the more suitable method. (Yin, 2004)

As the main question this research is trying to answer is weather benchmarking can be considered as an effective tool for improvement in projects, survey was chosen as the research method. The aim of using a survey method is to “develop a representative picture of the attitudes and characteristics” of large set of people, or in this particular case project managers. (Check, 2012)

Joseph Check emphasizes that survey research involves gathering information from a sample of individuals through their question responses. Robert Yin (Yin, 2004) clarifies that when implementing surveys data collection and data analysis are expected to appear independently. The gathering of the data should be finalized before the analysis begins. (Yin, 2004)
PMBOK summarizes that surveys are most appropriate “when a quick turnaround is needed”, or when participants location is geographically more widely spread. (Institute, 2013)

2.2 Survey validity and reliability

According to Dillman online surveys are generally considered cheaper, faster, and more convenient. In addition, they also have a potential for international reach, allow for elaborate skip-logic, and eliminate the faults when inputting the data. (Dillman, 2007). Yet online surveys can produce complications as well, especially in terms of validity.

Parry defines validity as “a survey represents what it intends and claims to represent” (Parry, 1950). The author goes deeper into the subject by adding two sub-types of validity: external-, and internal validity. Parry refers external validity to the validity of the survey beyond the study. Internal validity is to ensure that conceptually what is aimed to measure is what is actually measured. Finally, “validity can be contrasted with reliability: a study giving stable results across trials”. (Parry, 1950). D. Vaus asserts that “validity presupposes reliability: if (sets of) questions (instruments) are not reliable indicators of what they try to measure, they cannot guarantee that one measures what one thinks one does.” (Vaus, 2001)

2.3 Data collection

Ellen Taylor Powell (Powell, 2000) underlines the fact that choosing the proper type of survey could be one of the most critical decisions to be made. She further on clarifies that the types of questions are commonly cloze-ended, meaning there is a preset amount of responses. Open-ended questions require the user to supply the response.

Ellen Taylor Powell (Powell, 2000) explains that Questionnaires are said to be self-administered when they are filled in by the respondent on their own, and researcher administered when the answers are administered by a researcher in the form of an interview. (Powell, 2000)
<table>
<thead>
<tr>
<th>Self - administrated</th>
<th>Research-administrated</th>
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<tbody>
<tr>
<td>• Cheaper</td>
<td>• Can clarify questions</td>
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<tr>
<td>• No interviewers needed</td>
<td>• Ensure completion of questionnaires</td>
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<tr>
<td>• Can be used for large number of participants</td>
<td>• Higher response rate</td>
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<td>• Avoid interviewer bias</td>
<td>• Greater control of environment</td>
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<tr>
<td>• Quick and easy to code and analyze</td>
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Table 1 - Self-administrated vs. Research – administrated (Adolphus, 2013)

Margaret Adolphus, Senior Lecturer in Publishing, West Herts College, (Adolphus, 2013), lists different techniques in which surveys can be administered:

• By mail - self-administered – This type has proven to be outstanding when the goal is to reach a large number of people; The downside is that the response rate might be unsatisfying due to relying simply on recipient’s time and motivation to fill it in

• Group-administered questionnaire – In this case recipients are people are grouped together and given the possibility to fill the instrument together. This permits data collection and data administration to be performed all at once.

• Personally administered – Recipients are contacted directly in the street or at their home. This approach ensures a reasonable response rate, as people tend to have difficulties saying “No” in person. The disadvantage in this option is the high cost related to the personnel performing each meeting.
• Telephone interviews – In terms of cost this type is considered cheaper than the personally administrated, but the biggest drawback is that most of the people dislike the interruption over the phone.

• Online or email - The use of this type has been increasing, and they are very quick and cheap to deliver, particularly online interactive forms. The drawbacks are: computer glitches, hostile attitude and spam.

The American Statistical Association (Association, 1993) compliments to that by identifying the issues with the sample group one needs to consider when initiating a survey:

• What data is available? – Is there any existing information or contact details about the sample group?

• Can respondents be found/located? – One might not be able to locate or make contact with the sample.

• Who is the respondent? – Is there a specific target group?

• Are response rates likely to be a problem? – Some members will refuse to responds, others might have time limitations that will interfere with completing the questionnaire on time. Low response rates are among the most challenging problems in survey research.

Wybo Wiersma (Wiersma, 2008) classifies the most common solicitation problems:

1. Limited coverage – for a long time the most common threat to external validity for web surveys was that a great number of the population didn’t have access to Internet. Nowadays this has developed to be less of a problem in Sweden having the fourth highest Internet usage rate (94%) in the world. (Union, 2010)

2. Lack of a sampling frame – E. Babie (Babie, 2007) concludes that random sampling is important, as without it, introducing biases is almost inevitable. In order to take a random sample, one first needs a list of ones population of interest, called a frame. But no such list exists for internet users. “And where it is possible to randomly generate phone-numbers, this does not work for e-mail addresses.” (Couper, 2000)
3. Low response rates – Sheehan (Sheehan, 2006) states that low response rates are problematic because the people that don’t participate, are usually different from those that do. For mail-surveys, response-rates between 40 and 70% are quite normal, while for e-mail and web-surveys response-rates often fall (far) below 30%. Sheehan continues by identifying a more pressing issue behind low response-rates, is that (e-mail) requests are being considered as SPAM. This is a problem similar to that of telemarketing, which two decades earlier caused a drop in response-rates for phone-interviews. (Sheehan, 2006)
3. Literature Review

This chapter will review the existing literature on the topic of benchmarking, its types and how benchmarking is connected to project management. It will also look into how to choose the appropriate areas of benchmarking in project management and how to define the metrics for effective benchmarking.

3.1. What is benchmarking?

As identified by Reza Rahimi (Rahimi, Tavassoli, & Mollaee, 2009) the fundamental meaning of benchmarking is learning from others - it combines the knowledge as well as the experience of others in order to improve the organization. Andersen continues by adding (Andersen, 1996): "The process of continuously measuring and comparing one's business processes against comparable processes in leading organizations to obtain information that will help the organization identify and implement improvements."

Yasar Jarrar writes that the best-in-class performers are the ones that set a benchmark. He continues by describing that a benchmark is a standard of excellence against which others measure and compare. Benchmarks are performance measures and they answer to questions like (Jarrar, 2001):

- How many?
- How quickly?
- How high?
- How low?

Codling states that forming benchmarks is essential part of benchmarking, but of itself does not provide an understanding of best practices or knowledge of benchmarks that could necessarily result in improvement. (Codling, 1991)

While there is no lack of authors defining the term benchmarking, there is no agreed definition of the term due to the fact that benchmarking "requires great subtlety of understanding and clearly means different things to different people" (Bendell, 1993). The absence of such provokes Colin Carey (Carey,
1995) to summarize and identifies key point from numerous definitions:

- The methodology of examining in detail something your organization does (the performance measures and practices).
- Comparing it with a similar process that is being performed more efficiently and effectively in your own or another organization.
- With the objective of finding ways of making significant improvements to your own process

However those definitions focus on production-oriented organizations or individuals. Hence the focus of this research is benchmarking in projects, here is how PMBOK defines benchmarking project environment: “Benchmarking is the comparison of actual or planned project practices to those of comparable projects to identify best practices, generate ideas for improvement, and provide a basis for measuring performance. Benchmarked projects may exist within the performing organization or outside of it, or can be within the same application area. Benchmarking allows for analogies from projects in a different application area to be made.” (Institute, 2013).

Benchmarking in projects could also be defined as “the activity of comparing context, processes, strategies and outputs across firms/projects in order to identify the best practices and to evaluate one’s position with respect to them” (IMEC, 1995).

William Lankford (Lankford, 2000) summarizes that benchmarking is not only about making changes and implementing improvements; it is about adding value. If a certain change is not going to bring benefits in some way, no organization should implement it.

Robert Camp (Camp, 1989), one of the pioneers of organizational benchmarking, explored the idea that benchmarking, if done properly, can lead to superior performance. In order to succeed, one should keep in mind the following key process steps that are the foundation to any industry:
Benchmarking is vital for effective project management and the benefits of it are countless. Project Management Institute (PMI, 2005) highlights the most significant ones:

- The continuous assessment of an operation’s performance against that of its competitors
- The adoption of world-class practices to improve performance and competitive advantage and gain superiority
- The facilitation of breakthrough thinking by direct observation of what has been possible elsewhere
- The mitigation of risk associated with change, since the change is built on the notes of what has allowed others to succeed.

Andersen (Andersen, 1996) says that benchmarking without a doubt can be a “powerful tool for organizational learning”. As any other technique though, one should be aware of its potential limitations and drawbacks. Robert Boxwell (Boxwell, 1994) categorizes the greatest of them. According to him benchmarking can require a great investment in “time, labor, and capital”. “A major limitation of benchmarking” – he continues, “is that while it helps organizations in measuring the efficiency of their operational metrics, it remains inadequate to measure the overall effectiveness of such metrics”. Benchmarking reveals the principles attained by competitors but does not consider the conditions under which competitors attained such standards.

Another big disadvantage that Boxwell identifies is the mistake that many organizations make to undertaking benchmarking as a stand-alone activity. Benchmarking is “only a means to an end, and it is worthless if not accompanied by a plan to change”. (Boxwell, 1994)

According to Project Management Institute (PMI, 2005) it has been a while since top management have acknowledged the fact that change can lead to loss of competitive advantage within no time and it is absolutely not acceptable to stand still; leaders have to monitor their organization’s performance and launch programs for improvement. Harrington once said that measurements are key. “If you cannot measure it, you cannot control it. If you cannot control it, you cannot manage it. If you cannot manage it, you cannot improve it. It is as simple as that.” (Harrington, 1996). Good benchmarking, no matter if it aims to measure the success of a project or organization, its maturity or performance levels, it heavily depends on selecting the right set of metrics for useful and productive measurement. (PMI, 2005)
3.2 Types of Benchmarking

Benchmarking types can differ depending on the nature of the object being benchmarked and the partners with whom the assessment is being made. Literature shows no consensus on the types of benchmarking. For the purpose of this paper and focus on project management, the types defined by Andersen and Pettersen (Andersen, 1996) will be used:

1. Compare what?

   • Performance benchmarking: comparison of performance measures (financial and/or operational) for the purpose of determining how good one’s own company is compared to others
   • Process benchmarking: comparison of methods and practices for performing business processes, for the purpose of learning from the best to improve one’s own processes
   • Strategic benchmarking: comparison of the strategic choices and dispositions made by other companies, for the purpose of collecting information to improve one’s own strategic planning and positioning

2. Compare against whom?

   • Internal benchmarking: comparison between departments, units, subsidiaries, or countries within the same company or organization.
   • Competitive benchmarking: direct comparison of own performance/results against the best real competitors, i.e., that manufacture the same product or deliver the same service.
   • Functional benchmarking: comparison of processes or functions against non-competitor companies within the same industry or technological area.
   • Generic benchmarking: comparison of own processes against the best processes around, regardless of industry
The focus on project management and its processes requires a fundamental discussion of project and project management.

3.3 Definition of project management

3.3.1 Definitions of a project

In project management it is essential for one to understand the meaning of the term “project in order to succeed. According to the PMBOK, projects have temporary, time-predefined character and their goal is to create “unique product, service, or result.” (Institute, 2013).

In this book “Fundamentals of Project Management” James Lewis (Lewis, 2001) highlighted that the nature of a project is to be performed just ones. In case the event recurs, it shouldn’t be considered as a project. “A project”, he continues his explanation “should have a definite starting and ending points (time), a budget (cost), a clearly defined scope – or magnitude – of work to be done, and specific performance requirements that must be met” (Lewis, 2001).

3.3.2. Definitions of project management

According to PMBOK (Institute, 2013), Project management is the application of “knowledge, skills, tools, and techniques” to plan activities to meet the project requirements. Which consisted of five processes are: initiating, planning, executing, monitoring and controlling and closing.

Project Management is defined by Gerard Blokdijk as “the act of organizing
and managing resources in a disciplined activity, so that a project would be completed within the defined time, scope, quality, and cost constraints.” (Blokdijk, 2007).

Harold Kerzner writes the overview definition of project management as “the planning, organizing, directing and controlling of company resources for a relatively short-term.” Furthermore, he continues, project management utilized “the systems approach to management by having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy)”. (Kerzner, 2013)

3.4 Benchmarking in Project Management

Over the time researchers have identified that benchmarking in projects is an area that requires more study in order to show its full potential. In the process of examination researchers have identified some gaps. Lema and Price (Lema, 1995) recognize 4 main problems within the TQM framework that require more attention:

- What areas should benchmarking focus on?
- Identification of sources of best performance and best practices, in other words - Who can be compared against?
- Setting out a methodology for adapting and improving the best practices in an organization - What methodology can be followed to incorporate new knowledge and improve?
- Establishing a framework about how to compare performances and set targets in an organization, both within the industry and outside the industry. In other words - Internal and/or external benchmarking.

Rahimi and Tavassoli (Rahimi, Tavassoli, & Mollaee, 2009) define and summarize the two most important issues in project benchmarking:

- To decide what areas of project management to benchmark
- To decide what to measure and define metrics
3.4.1 How to choose appropriate areas of benchmarking?

In order to identify the appropriate benchmark metrics for project management one need to identify the objectives of benchmarking. Many authors, among Harold Kerzner (Kerzner, 2013) and Andersen (Andersen, 1996) believe that the fundamental goal of benchmarking is improvement. Below are listed the 3 main dimensions that drive organizational performance of project management, based on the research of Project Management Institute (PMI, 2005)

- Process Maturity - Process maturity defines the quality, level of performance of an overall process. It is a measure of the quality and capability of a process.
- Process Effectiveness - Process effectiveness examines how useful and relevant the process is in supporting the specific types of projects being conducted and the overall culture of an organization. Do the processes make sense? Are they appropriate for the size and type of projects being conducted?
- Project Effectiveness - Project effectiveness explores the extent to which the process outputs meet the needs and expectations of its customers (e.g. accuracy, performance, timeliness and costs)

In practice when working with metrics, it is not impossible that at some point some metrics might overlap somehow within the categories of process maturity, process effectiveness and efficiency.

In an interview done by Project Management Institute Mark Mullaly, the President of Interthink Consulting Incorporated, says that (Mullaly): "All too often, the benchmarking of project management looks only at project effectiveness – are we delivering projects on time, on budget and to specification, and how much better are we at this than our competitors?" – "While ignoring the effectiveness and maturity of the underlying processes”, he continues explaining”, “the latter points are particularly relevant to the services sector, where the results of a project tend to be less tangible than other market
sectors, and the need to be able to reliably and measurably deliver positive end results is therefore that much more important.” (Mullaly)

3.4.2 How to define metrics in benchmarking?

Project Management Institute (PMI, 2005) has listed the 10 most common metrics for effective benchmarking in Project Management. Terence Cooke Davies (Cooke, 2003) contributes to the list by adding that it is essential to keep in mind the lack of single metrics set relevant for all organizations. In addition he has noted that in benchmarking the word metrics is often understood as quantitative data, but in fact qualitative information is as much needed. The listed metrics, he continues, are more like a guideline and each organization is encouraged to choose performance indicators that reflect the most to its unique strategies and goals. (Cooke, 2003) He continues by explaining each of the metrics:

• Project cost:

Organizations must know how much is invested in project management and weather its gains are appropriate to project management.

• Project Schedule Performance:

The ability of an organization to estimate costs and schedule accurately enables it to make the most efficient use of its resources, both human and capital.

• Return on Investment

At some point any organization involved in project management must calculate what is the value of project management to its operation. Return on investment, defined as "a calculation of the return (additional revenue or projected revenue) that undertaking a project will achieve over a given period of time," is one way of determining this value. (PMI, 2005)
• Staffing

The most critical project management resource is the humans. Organizations need to be certain that they have not only the right amount of staff but also the proper personnel ratios among those responsible for and involved with all aspects of project management.

• Productivity

Productivity is defined as output produced per unit of input. Productivity measures whether people and other inputs to the organization are worth the money spent.

• Project cycle time

The project life cycle defines the beginning and the end of a project. Cycle-time measures are established on standard performance, in other words similar projects can be benchmarked to determine a standard project life-cycle time.

• Post-Project Reviews

Project experts holding formal reviews of their projects facilitate the process of identifying lessons learned while providing valuable and useful feedback for future projects.

• Risk Management

Risk management is the ultimate indicator of overall project process maturity. Particular areas of attention within an effective risk management metric should include a formal approach to risk Identification and assessment, active monitoring of project risk factors throughout the project, and a commitment to conduct periodic risk reviews during the execution of the project. (PMI, 2005)

• Alignment to Strategic Business Goals

For an organization to attain portfolio success within its project management function, its projects must be aligned with organizational strategy. This includes
an alignment between project spending and corporate strategic goals, as well as the overall corporate level of project delivery against plan, scope and budget.

• Customer Satisfaction

Delivering consistent customer satisfaction enables an organization to command greater loyalty from its customers than its competitors are able to.
4. Survey

After a careful consideration of the variety of surveys, mentioned in Chapter 2. Methodology, for the purpose of this research it has been decided that self-administered online survey with a mix of open-ended and close-ended questions would fit best the research needs.

4.1. Conducting the survey

Having in mind the time limitations and the lack of contact details, the author decided to use email survey as an instrument for data collection. As already indicated in the previous chapter, online survey tends to have some serious disadvantages, for example cooperation problems and misunderstandings due to the lack of interviewer.

The first milestone faced was connected to the data sampling. It was previously decided that the target group will be project managers with different experience levels, gender and work industry. To ensure the diversity in the participants the author contacted via email the HR specialists in 159 companies located in Sweden. The email explained the purpose of the survey and clarified that the survey was anonymous and easy to complete. HR were to decide weather that would fit into the company’s policy, if they have project managers who might be willing to participate. Responses were received from more than 80% of the companies.

- Some gave negative answer
- Other forwarded the emails to their project managers so they can make the decision themselves
- Some required more information in order to secure themselves and the company
- Other were already involved in other kind of thesis surveys
- Some companies had strict policy about not participating in any kind of student work - being thesis, surveys or interviews
- There were also a certain number of recipients that simply missed the deadline and send their email back too late.
After extensive communication a list of 30 project managers’ contact details was created. Having in mind the classification of Wybo Wiersma (Wiersma, 2008) of the most common solicitation problems and K. Sheehan’s (Sheehan, 2006) estimation for low responses to email surveys both mentioned in chapter 2.3, the author contacted all 30 project managers in advance to inform them about the survey, it’s purpose and to check their availability and willingness to take part in it. Out of the 30 project managers, 2 were neither available nor willing to participate. The rest 28 project managers confirmed their will to share their experience. As some essential questions required sharing professional experience, the survey was designed anonymous. The transcript of the survey is attached to the research as Appendix 1.

4.2. Survey results and analysis

4.2.1 Survey outcome

As indicated in chapter 2.3 Data collection, Sheehan (Sheehan, 2006) states that for e-mail and web-surveys response-rates often fall (far) below 30%. Based on the findings of Joseph Check (Check, 2012), when conducting mail self-administrated survey, “a response rate of 70% or higher is desirable; lower response rates call into question the representativeness of the sample.” It reached 28 Project Managers and completed by 21 of them, which indicates 75% participation rate. Having in mind the desirable response rate implied by Joseph Check, the survey results are to be considered reliable.

4.2.2. Recipient’s profile

Part of the survey was designed to indicate more information about the participants. The 21 participants are representatives of the following industries:

- Project Management building/civil engineering
- IT consulting
- Energy/nuclear
- Steel manufacturing
- Software
As nowadays an individual often has to combine more than one job functions, the respondents are given the opportunity to select more than one answer when identifying their position. In between all participants 76% are Project Managers, 19% are members of the project management team and 24% have stated to work as something different, however involved in project management.

![Figure 3 - Participants’ position](image)

The next profile question shares the project management experience level of the participants:

- 10% stated that they have 0-2 years of experience
- 24% indicated 3-5 years of experience
- 14% - 5-10 years of experience
- 52% more than 10 years

![Figure 4 - Participants’ experience level](image)
The last profile question reveals what kind of percentage on their current position is project related:

- Up to 25% - 10% of the participants
- Up to 50% - 5% of the participants
- Up to 75% - 14% of the participants
- Up to 100% - 62% of the participants
- Other - 5% of the participants

![Figure 5 - Participants' project related work](image)

**4.2.3. Survey results and analysis**

Overall, the results have revealed a clear spread of benchmarking across various industry sectors and organizational sizes. Despite the diversity in industries and experience, 86% of the participants categorize benchmarking as an effective tool for improvement in projects, without a doubt supporting the statement of Robert Camp (Camp, 1989) that benchmarking could lead to improvement and “superior performance”. Nevertheless, the survey exposed strong evidence that project managers are aware of the benefits of using benchmarking that does not always lead to implementing it. Out of the 86% considering benchmarking as an effective tool, all have indicated that they use it at some extent, but only 10% confess that they always use it, following by 24% that use it almost always, compared to slightly higher percentage of 29% that declares to rarely use benchmarking.
Some of the main obstacles they identify for using benchmarking are:

1. **Confidentiality** - it is difficult to find “a way in” (Participant) to the companies one would like to benchmark. Due to the competitive nature, data recuperation will not be straightforward. Another participant states that as a way around that they go to seminars and listen to how other companies work with projects

2. **Time consuming**

3. **Lack of repeatability in the projects**

When using benchmarking though, participants share facing quite a few difficulties when implementing benchmarking. They could be summarized and categorized as follows:

- “*We are pretty unique in what we do.*” “*Those we would like to benchmark are also competitors and therefore hard to benchmark*, therefore “*It’s hard to find a matching project to benchmark against.*”

- “Finding reliable metrics to compare with”; and then “aligning the metrics to be able to keep a common base for evaluation.”

- “*To decide how comparable two objects are and how you can make them more comparable*”; so later on one can “*see how it can be implemented into our company, and to get time for doing so*”
Based on PMBOK (Institute, 2013) projects create unique product, service. Having that in mind the PMBOK definition and the above listed drawbacks could be concluded that benchmarking could give significant results only when done externally. But locating an external benchmarking partner and setting up a benchmarking arrangement requires a significant investment in time and effort. The survey identified that out of the 3 primary types of benchmarking that are in use today, the participants have indicated the Process comparison (comparison of methods and practices for performing business processes) as the main one (71%), following by Performance (57%) and Strategies (38%).

![Figure 7 - Benchmarking types used by the participants](image)

Process benchmarking focuses on the day-to-day operations of the organization. It is the task of improving the way processes performed every day. Christopher Bogan gives some examples of work processes that could utilize process benchmarking, like “customer complaint process, the billing process, the order fulfillment process, and the recruitment process” (Bogan, 1994). One should keep in mind that all of these processes are in the lower levels of the organization. By making improvements at this level, performance improvements are quickly realized. Performance benchmarking (compared by 57%) focuses on assessing competitive positions through comparing the products and services of other competitors. When dealing with performance benchmarking, organizations want to look at “where their product or services are in relation to competitors on the basis of things such as reliability, quality, speed, and other product or service characteristics.” (Bogan, 1994)
When it comes to the decision against whom to compare, the results clearly indicate that most projects are compared internally (71%), paralleled to compared to competition (33%), to functions (33%), and overall (38%).

Dr. Vasilis Kelessidis (Kelessidis, 2000) highlights some of the advantages of internal benchmarking:

- Common language/system/culture
- Access to data
- Low threat
- Good communication channels
- Relatively quick results on low cost

The biggest disadvantage of internal comparison is discarding the external competition and accomplishments. Competition, function and overall comparison all require external activities at some level. Locating an external benchmarking partner and setting up a benchmarking arrangement requires a significant investment in time and effort. Therefore internal benchmarking could be seen as less costly in terms of time and money alternative. It indicates the points where developments should be made, functions should be modified, and determines how the internal structure should be changed.

Roger Swanson (Swanson, 1993) writes: “For most organizations, the decision to benchmark is not hard to make, but the decisions on which practices
to benchmark and which performance measures to use are difficult”. Most of the survey participants confess that the decision of which areas to benchmark mainly depends on the project itself and there is not a proven successful assessment or checklist one can follow. Apart from that, some specify that the decision usually lie within the quality evaluation “and/or comparisons to how others have solved similar challenges, in order to improve project processes” (Participant). Others share that the process often starts with understanding that “there is a problem”. Kim Harper expresses the opinion that some organizations do not use benchmarking up until there is an issue. “When a company is doing well financially”, she continues, “they have a tendency to resist change and not worry about competitors.” (Harper, 1996). Other participants base their decision on what will be challenging for the particular project and for themselves as project managers, a way to look for new developments and solutions that could “attract or discourage a customer to buy our product” As already mentioned by J. Harrington (Harrington, 1996), measurements are key. On the other hand the survey revels that the decision of what to measure is considered as the “difficult part”.

From the responses one could easily notice two patterns. First, despite the importance of identifying the right metrics for successful benchmarking, most of the time that has been already decided on a business unit level and implemented as a company standard. In other words, the decision of what to benchmark is not made by the project teams and can hardly be controlled by them.

“Defined and followed up on business unit level”
“Company standard”
“Each organization I’ve worked with has it’s specific Key Performance “Indicators and Benchmark Indicators.””
“Areas highly valued by customers”

Second, the decision is established based on the fact what data will be available, in other words, is the project compared internally or externally. “If the benchmark is done in-house you try to compare as much as possible. If not, you
compare whatever data you can get hold of.” (Participant); “I chose metrics I find myself able to compare.” (Participant)

As already mentioned in Chapter 3. Literature Review, the essential measurement categories that can be helpful guides in an organization’s project management planning. Based on the survey results, participants rated them as follows:

✓ Customer satisfaction – 67%
✓ Project cost – 62%
✓ Productivity – 57%
✓ Risk Management – 52%
✓ Project schedule performance – 38%
✓ Post-project reviews – 33%
✓ Staffing – 29%
✓ Return on investment – 24%
✓ Project cycle time – 19%
✓ Other – 14%
✓ Alignment to strategic business goals – 5%

Figure 9 - The most useful metrics in benchmarking according to participants
The survey exposed that from the list of the top 10 most common metrics for effective benchmarking, project managers consider the most useful:

- Customer satisfaction (67%) - Customer satisfaction means that customer expectations have been met and that clients are pleased with the performance of projects. (PMI, 2005)
- Project cost (62%) – As mentioned by one participant “Cost can be expressed by many things”. Project cost involves tracking a broad range of cost factors including salaries, wages and benefits of project managers and project support personnel; the information technology costs of project management tools; and the amortized value of training, consulting, building rent, travel, etc. Also cost of quality. Using CPI for measuring cost efficiency is another useful tool within the project cost metric. (Rahimi, Tavassoli, & Mollaee, 2009);
- Productivity (57%) – Project Management Institute suggests that the key to selecting the right productivity measurements is to ask you whether the output being measured (the top half of the productivity ratio) is of value to your customers or key stakeholders. (PMI, 2005)

5. Summary and conclusion

The main question this research is trying to answer is if benchmarking can be considered as an effective tool for improvement in project management both in theory and real life. The ever-growing literature on benchmarking indicates a wide spread of benchmarking applications across geographical and sectorial borders. Jarrar Yasar (Jarrar, 2001) forecasts that not long from now benchmarking will grow that much so it will become ‘way organizations do business’. The diversity within the survey performed echoes that with representatives from Project Management building/ civil engineering, IT consulting, Energy/nuclear, Steel manufacturing, Software, Telecom, Consulting, Automotive industry. Many companies are becoming interested in benchmarking for the improvement it allows. Benchmarking enables managers to determine what the best practice is, to prioritize opportunities for improvement, to enhance performance relative to customer expectations.
Benchmarking makes it easy to identify the gap between where the organization would like to be and where it actually is. It also helps managers to understand the most accurate and efficient means of performing an activity, to learn how lower costs are actually achieved, and to take action to improve a company's cost competitiveness. As a result, benchmarking has been used in many companies as a tool for obtaining a competitive advantage. Although benchmarking does have limitations they are far outweighed by its benefits. It is expected that the Internet and other electronic means will result in even better practice transfer. Knowledge is still power, as it always has been, but now it is increasingly in the hands of the many, not just the few. (Jarrar, 2001)

The survey results second the literature conclusion of benchmarking as an effective tool for improvement in project management. Nevertheless, it also indicates some obstacles when using benchmarking. Despite the well-known disadvantages of benchmarking, benchmarking in projects has one barrier to overcome, related to the fact that “project is done only once and if it is repetitive, it cannot be considered as a project” (Lewis, 2001). In the cases of internal comparison it is difficult to find a matching project to benchmark against. This points to the fact that when benchmarking internally improvements could be expected only at to some extent. In order to achieve greatest improvement, projects need to benchmark externally, however the literature findings and the survey results both prove this as a difficult task because as well pointed out by one of the survey participants “those we would like to benchmark are also competitors and therefore hard to benchmark”.

5.1. Recommendations for email survey conduction

Despite the expected response rate as stated in chapter 4.3.1. was around 30%, the survey achieved 75% participation rate. The author explains the discrepancy with the introduction contact with each of the participants. This communication ensured participants’ desire to be part of the survey and answered any queries they might have had related to the survey. In addition to that it ensured that the email survey is expected and it will not go into the
“spam” category. As a conclusion this technique helped to increase the survey participation rate and is recommended especially in cases of email surveys.

On the other hand the open-ended questions of the survey presented some valuable information but the anonyms nature of the survey prevented the author to contact the participants afterwards in order to deepen into their knowledge. The email surveys and the lack of interviewer present an opportunity for interpretation of the questions, which can lead into unclear answers. Taking that into consideration the author suggests to not performing an email survey anonymous if of course the nature of the topic allows it.
References


Appendix 1

Survey Form

1. Would you consider benchmarking as an effective tool for improvement in projects? *

- Yes
- No
- Other:

Follow up on question 2: If you don’t use it or you rarely use it, could you please state reasons why?

2. Do you use benchmarking as a technique for identifying ways to improve project performance? *

- Always
- Almost always
- Sometimes
- Rarely
- Never
- Other:

3. What do you compare? *
   multiple choices allowed

- Performance - comparison of performance measures (e.g. financial, operational)
 Processes - comparison of methods and practices for performing business processes
 Strategies - comparison of the strategic choices and dispositions made by other companies
 Other:

4. **Whom is it compared against?** *
   multiple choices allowed

   - Internal - comparison between departments, units, subsidiaries, or countries within the same company or organization
   - Competition - direct comparison of own performance/results against the best real competitors, i.e., that manufacture the same product or deliver the same service
   - Functions - comparison of processes or functions against non-competitor companies within the same industry
   - Overall - comparison of own processes against the best processes around, regardless of industry
   - Other:

5. **How do you decide which areas of projects to benchmark?** *

6. **How do you define the metrics, i.e how do you decide what to measure?** *
7. These are The 10 Most Common Metrics for effective benchmarking in project management. Please select the ones that are the most useful and applicable to you. *

Multiple choices allowed

- [ ] Project cost
- [ ] Project schedule performance
- [ ] Return on investment
- [ ] Staffing
- [ ] Productivity
- [ ] Project cycle time
- [ ] Post-project reviews
- [ ] Risk Management
- [ ] Alignment to strategic business goals
- [ ] Customer satisfaction
- [ ] Other:

8. What difficulties do you face when using benchmarking? *

9. Things that you want to share, but you were not asked? Please feel free!
10. Would you like to participate in more detailed survey or an interview?
If yes, please leave contact details (email or phone number)

Who are you?

Please indicate which industry you work in: *

Please share your title: *

☐ Project manager
☐ Member of project team
☐ Other:

How many years of experience do you have within the project management field? *

☐ 0-2 years
☐ 3-5 years
☐ 5-10 years
☐ more than 10 years

What percentage of your work is project related? *

☐ up to 25%
☐ up to 50%
☐ up to 75%
☐ up to 100%
☐ Other: