

Design and evaluate a deployment process for the ES benefits management method

Ruud Oude Maatman

Classification of change

Do new things (grow the business, transform the business):

- * transpar: better kpmg broad insight by uniform process (transpar)
- * improved ~~discipline~~ discipline (grow) by sanctions

Do things better, cheaper or faster:

- brede blik op organisatie
- draagvlak & acceptatie

- * better: PMC is the lead. ~~local~~ local planner
- * faster: kpmg broad insight

Stop doing things:

Vervanging werk over
dekkende capaciteit

PMC

Planner & PML

Design and evaluate a deployment process for the ES benefits management method

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Abstract

48% of the organizations that implement an Enterprise System (ES), realize less than half of their anticipated benefits. Current research shows that when building a business case for an ES project, their ability to identify the benefits of the project is below satisfaction, benefits are overstated and there is an insufficient understanding of the required business changes to realize the benefits. In previous research by the author, the ES Benefits Management (ESBM) method was created to overcome these problems, by provide organizations with a tool that helps them to identify and manage, specific and feasible benefits. The ESBM method has been validated with business experts, which means that the ESBM method, albeit designed for organizations, has never been tested in real life. The goal of this research therefore is to validate the ESBM method by applying it in real life ES projects.

Before the ESBM method could be validated, it is first transferred to a suitable form for deployment in the organization. Based on discussions with business experts and literature in the “requirements elicitation” and “methodology” field, an interview and two workshops were selected and designed to deploy the ESBM method. The ESBM method was deployed in three different types of ES projects: implementing a module of an ES, roll-out of the global ES to a local entity and replacing the global ES. The size of the cases ranged from several €100.000’s to multiple millions.

The outcome of the cases and the results from the questionnaires show that the ESBM method is capable of (all in relation to not using an benefits management method):

- Finding additional benefits
- Creating specific benefits
- Creating feasible benefits
- Creating relevant benefits
- Increase the manageability of the benefits identified

The ESBM method increases commitment of the participants and creates more insights in the projects. The main element used by the ESBM method to create not only accurate and feasible benefits but also increased insight is providing the participants with a platform and process that generates discussions. Bringing together six viewpoints and guiding the participants trough the deployment process of the ESBM method, requires the participants to specifically define how they see a benefits, which ignites and intensifies discussions.

Deploying the ESBM method showed it is applicable for adopting organizations, each of the companies would use it for future business cases. Deploying the ESBM method requires on average 8 hours per participant, for six to ten participants. From the participants at least two thirds should have a business background to optimally use the ESBM method. The ESBM method becomes viable to use for projects with a budget starting at €500.000.

The main recommended improvements to the ESBM method are to increase the duration of the workshops to four hours, add a C-level workshop before starting with workshop 1 and add an intermediate discussion of the benefits with the participants they have been assigned to.

Preface

Starting a research elective, ending with a master thesis, that is basically what happened. Choosing to assist Silja in her research on Enterprise System business cases, was one of the best choices I have made in my Master's program. During the research elective we built the Enterprise System Benefits Management method and evaluated it with a number of business experts. One of the business experts, Mark Meuldijk, saw the potential of the method and provided us with the opportunity to validate the method in real life cases. It is around six months back that I accepted this challenge to deploy the method, created in the research elective, in real life cases.

Working on this master thesis has granted me the possibility to work on my personal development in various aspects. I needed to manage, not only the goals of the university's supervisors and KPMG's supervisors, but also the clients'. This made executing this thesis a real challenge! Next to managing the goals, managing the deadlines for this thesis has helped improving my planning capabilities. Being engaged in real projects at KPMG has furthermore taught me various lessons on how to optimize collaboration with team members, approach and manage clients, manage workshops and many more. Last but not least, working on this thesis at KPMG has made me realize once more how important colleagues are, not only for the quality of your work, but more importantly for the pleasure in your work. I made several new friends and enjoyed the company of the colleagues at the GPA practice in Amstelveen all along the way!

Finishing this thesis would not have been possible without the help and support from a lot of people. First I would like to thank Han for his continuous help, advice and availability. Not only did he pull me through the most difficult time of analyzing and putting the results on record (in two weeks), he was always available to spar on the thesis and was the best assistant one can think of for running a workshop! Second, I would like to thank Mark for keeping me on track making the ESBM method as usable as possible. Most of all I would like to thank him (and Jeroen Kunis) for the faith they had in the method and in me, they were willing to take a chance and provided me with three real life cases. Without these cases, validating the ESBM method would never have been possible. Third, I would like to thank Silja. Silja has been my most important sparring partner, ever since starting the research elective. Without her support and strong thinking, the ESBM method would not have existed in its current form, let alone validating it in real life. Fourth, I would like to thank Christiaan. His razor sharp analysis of the work and his capability to put the work in different perspectives has greatly improved the quality of this thesis. I would like to thank both Silja and Christiaan for their devotion to this project, even at moments in which I was stubborn. Fifth, I would like to thank Jelle. He has helped me setting directions for the thesis. Especially in the difficult first couple of months he helped me directing the thesis and boosting my motivation when progress was not as I was hoping for. Sixth, I would like to thank family and friends, without their support this thesis would not have been possible. Last I would like to thank Amber for her unlimited support during this thesis!

Enjoy reading,

Ruud

Amstelveen, October 27th 2011

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1. Introduction

To place this research in the context in which it belongs we will provide the reader with insights into the research area. This chapter will first describe the research area by showing the research's background (1.1). This will be followed by a short introduction to the ES benefits management method (1.2) which is at the root of this research. Based on the background and the ES benefits management method, section 1.3 formulates the goal of the research. Lastly, section 1.4 will provide the reader insight into the structure of this research.

1.1. Background

Every year companies are starting IT-projects to improve their businesses, even though 7 out of 10 IT-projects fail (Ellis, 2008; Panorama_Consulting_Group, 2011; The_Standish_Group, 2009). Projects run over budget, over time or fail to achieve the goals set at the start of the project. The Standish Group (2009) indicates that increasing the size of the project results in an even larger chance of project failure. By definition this gives Enterprise Systems (ES) projects a low success ratio. One might ask, what makes ES projects distinct from regular IT-projects? ES characteristics provide insight in this question.

The first ES characteristic is that ES involves a cross functional integration of business units (Davenport, 1998). Depending on the configuration of the ES, all information through the company must be integrated (Markus & Tanis, 2000) and an enterprise wide database (Davenport, 1998) is used.

The second ES characteristic involves the complexity of ES project. Davenport (1998) indicates ES projects are high complexity projects. ES are sold as commercial packages, that force the company to adjust to the package and commit a long term relationship with the vendor (Markus & Tanis, 2000). Next to that, ES are evolving, ES aspects (e.g. architecture, terminology) keep changing (Markus & Tanis, 2000), which makes it harder to integrate the (right version of the) ES in the organization. When it comes to implementing an ES, assembly is always required. Some of the current hard- and software have to be integrated in the ES (Markus & Tanis, 2000). This makes the project even more complex.

The third ES characteristic is the involvement of the organization's core process in ES projects (Davenport, 1998). Integrating business areas is one of the main elements of an ES. Integrating several business areas into one, automatically involves integrating their business processes. Especially as ES are built around best practices, which are mostly focused on a general business level. Therefore, changing the organization's processes to suit the ES best practices requires business process reengineering (Markus & Tanis, 2000).

The fourth ES characteristic is that several modules have to be selected, where each module suits specific business processes (Markus & Tanis, 2000; Scott & Vessey, 2002). Without selecting the right modules, the ES will not be able to fully support the business. Due to the high amount of different modules ES projects become even more difficult.

The fifth and last ES characteristic is that implementing an ES requires a long term planning (Chen, 2001) for which an implementation strategy needs to be chosen (e.g. big bang, phased, pilot) (Scott

& Vessey, 2002). The implementation strategy has to fit with the organization. Selecting the wrong implementation strategy has a large impact on the success of the implementation.

These five characteristics show that ES projects are more difficult and complex than regular IT-projects. ES projects are challenging implementations projects that might influence the entire organization, however it does not fully tell us why ES projects do not run on time and budget and achieve fail to achieve goals. Constructing a decent business case (BC), that helps to set the goals and the scope of the project at the beginning of the project, is essential to successfully complete an ES project (Finney & Corbett, 2007; Nah, Lau, & Kuang, 2001). In many cases of completing the BC, the benefits section is insufficient (Peppard, Ward, & Daniel, 2007). The benefits are either dressed up to meet the goals set by the management or lack a sufficient amount of justification (Ward, Daniel, & Peppard, 2008). The increased difficulty and complexity of ES projects (in relation to IT-projects) makes it even more important to create a decent and extensive business case.

A survey amongst 100 European organizations (Ward, De Hertogh, & Viaene, 2007) shows that 65% of the organizations indicate that they are not satisfied with their ability to identify all available benefits for an IT-investment, even though benefits are a major aspect of the BC (next to costs). Moreover, Peppard et al. (2007) found that organizations try to increase the Return On Investment of an ES implementation by focusing more on the spending than on the (potential) IT benefits realization. 48% of the organizations receive less than 50 percent of their anticipated benefits (Panorama_Consulting_Group, 2011). This shows once more that work is needed to increase the organization's ability to manage the benefits of ES-projects.

Other research indicates that the (potential) benefits of ES implementation are often overstated (Lin & Pervan, 2003; Ward, et al., 2008; Ward, Taylor, & Bond, 1996) and that there is insufficient understanding of the business changes needed to realize these benefits (Peppard, et al., 2007). Seeing that benefits are dressed up, lack sufficient justification, are difficult to identify for organizations and are often overstated, shows that companies lack a necessary level of skill and knowledge when it comes to determining the benefits of their ES project. Organizations need to increase their knowledge and capabilities to identify and manage the benefits of their ES projects.

ES benefits management could help these companies to increase their knowledge and capabilities to identify and manage the benefits, as it helps the organizations to identify and specify benefits that can be managed. Based on Peppard et al. (2007) we define ES benefits management as: *the process of determining and managing so that the potential benefits arising from the use of ES can be realized*. In this definition we scope benefits as: all organizational, financial and intermediate benefits which are made achievable by implementing the ES. ES include Enterprise Resource Planning (ERP) software and such related packages as advanced planning and scheduling, sales force automation, customer relationship management, and product configuration (Markus & Tanis, 2000).

1.2. The ES benefits management method

Previous research by the author was set out to find an ES Benefits Management (ESBM) method which would help companies improve their ES-benefits management (Oude Maatman, 2010). In this research the lack of use of existing methods is shown, mostly caused by a high level of abstraction and lack of mapping to the business (Chand, Hachey, Hunton, Owosho, & Vasudevan, 2005; Remenyi & Sherwood-Smith, 1998; Schubert & Williams, 2009). Thus, from both a scientific and a practitioner's perspective it is interesting to create an improved method especially based on

usability. Before creating the ESBM method, the research first focused on finding the reasons why current benefits management methods are not used by practitioners. Subsequent the research aimed at defining the business needs for an ESBM method. The answers to both questions were then combined with the IT-benefit management method by Ward, Peppard and Daniel (2006; 2008; 2002). The IT-benefit management method was selected, as it is the only benefits management developed from benefit practices used in organizations. The result is the ESBM method that guides the organization to determine and manage the benefits of an ES implementation business case.

1.3. Goal of the research

The initial ESBM method validation with business experts showed the method's potential to deliver more realistic benefits than current practices, while remaining easy to operate for the organizations (Oude Maatman, 2010). A consecutive validation of the ESBM methods main aspects by Divendal (2010) revealed two side-effects: higher commitment to the project (and its BC) by the ESBM method's practitioners and the capacity to use the ESBM method to evaluate the benefits in a project. However, the complete ESBM method has not been used by / at organizations which grants the ESBM method only a conceptual status. To upgrade the ESBM method's status, we need to use it in ES projects and verify whether it increases the quality and execution of the benefits side of ES business cases. Therefore, *the goal of this research is to provide validation for the ES-benefits management method by using it in real life cases and assessing it on its usability.* For the quality the research will focus on the specificity and feasibility of the benefits, for the usability the research will focus on the efficacy and deployability of the ESBM method.

1.4. Structure of the research

To reach the goal of this research the research has been divided in eight chapters, of which the introduction chapter is the first. The second chapter provides the methodology of the research. It will treat the research goals, the research questions and how this research is going to answer the questions. The third chapter introduces the reader to the ES Benefits Management (ESBM) method. As the root of this research, the train of thought for creating the method, the ESBM method itself and its context and scope are treated. The fourth chapter shows how the ESBM method will be validated. It will start with the validation requirements originating from the ESBM method and use these to select and design the Technical Action Research to validate the ESBM method. To use the ESBM method in ES projects, the method has to be transformed to a process in which it can be deployed. Chapter five shows how two workshops and an interview round are selected as the deployment process for the ESBM method. In chapter six the design and content of the interview and workshops are developed. In chapter seven the deployment of the ESBM method in three ES projects are reported. Based on the results of chapter seven, chapter eight provides the verdict on the ESBM method and the relevance of the results. The structure of the research can also be seen in Figure 1.

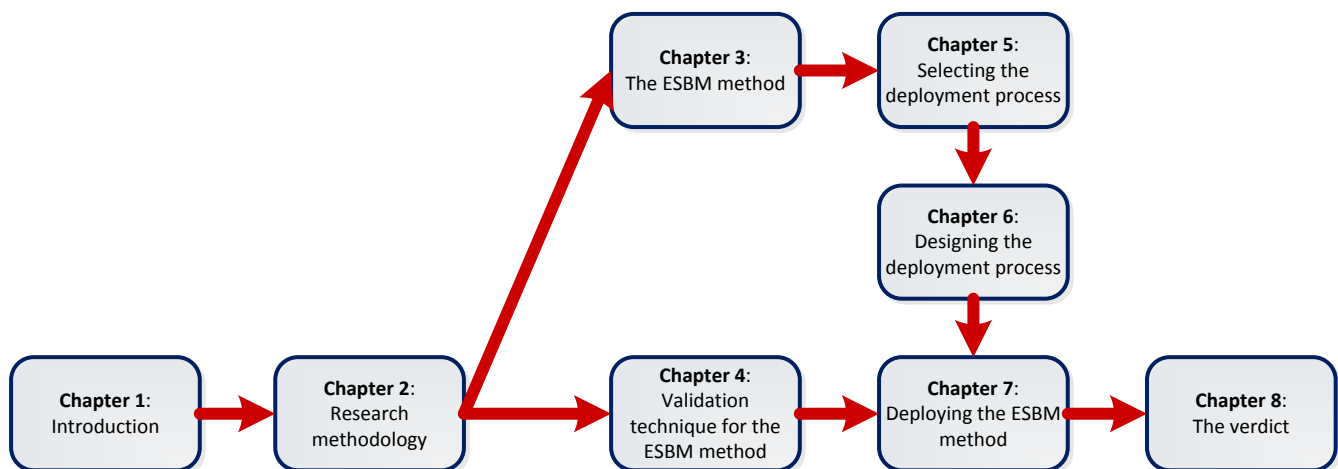


Figure 1 Structure of the research

2. Research methodology

This chapter will show the structure and the methodology of the research. First the goal of the research will be defined (2.1). Based on the research goal, the research questions are deduced in 2.2. In 2.3 the research methods for arriving at the answers for the research questions are treated.

2.1. Research goals

The introduction already explained that the ESBM method has not been validated in practice. Thus, the goal of this research is to validate the ES benefits management method created in Oude Maatman (2010) in real life ES implementation projects. Before being able to validate, the ESBM method must first be translated to a process in which it can be deployed. The deployment process of the ESBM method will serve the goals that were used to create the method: to create a more *realistic* and *operational* ES-benefits management method. Where realistic is referring to the accuracy and feasibility of the expected benefit and operational is referring to the fit for use for BC building practitioners. Thus the method will be validated on the accuracy of the expected benefits and its applicability for adopting organizations.

2.2. Research questions

The main research question is directly deduced from the research goal: *How to design and evaluate a deployment process for the ESBM method, that is applicable for adopting organizations, and leads to accurate and feasible benefits?* For answering the main research question the following sub questions will be used:

- Rq. 1 Which validation technique is suited best to determine whether the ESBM method creates accurate and feasible benefits while remaining applicable for organizations?
- Rq. 2 What deployment process is suited best to deploy the ESBM method in organizations?
- Rq. 3 What should be the contents of the ESBM deployment process?
- Rq. 4 Does the ESBM method create accurate and feasible benefits, while remaining applicable for the adopting organizations when constructing the business case for an ES?

Note that Rq. 2 is input for Rq. 3; and Rq. 1 and Rq. 3 are input for Rq. 4.

2.3. Research model

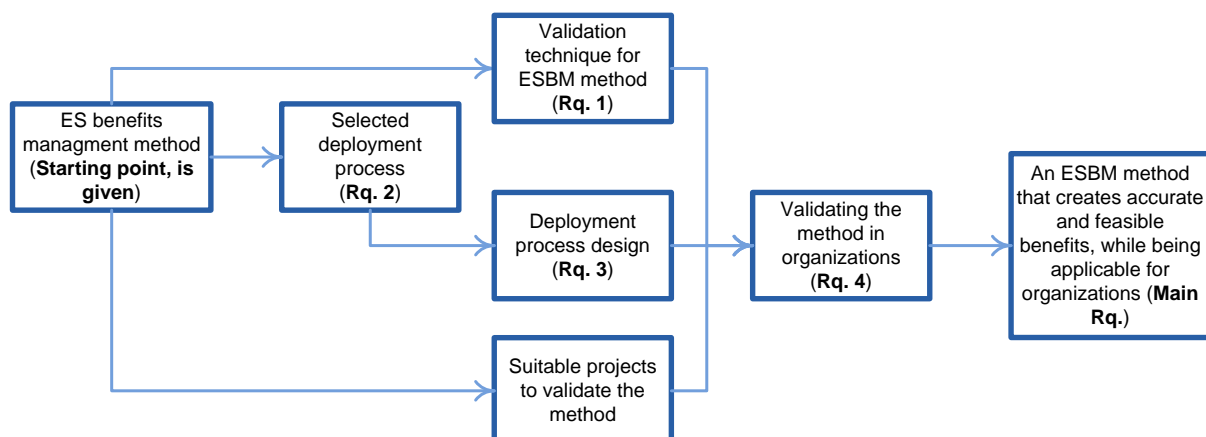


Figure 2 Research model

The overall research method can be found in Figure 2. The methods used to find the answers to the research questions as well as the sections in which they are treated are provided in Table 1.

Table 1 Research methods

Research question	Research method	Section
Rq. 1: Suitable validation technique for the ESBM method	<ul style="list-style-type: none"> A structured literature study will be conducted, following the guidelines by (Webster & Watson, 2002) to identify the relevant literature 	4
Rq. 2: What deployment process is suited best to deploy the ESBM method in organizations?	<ul style="list-style-type: none"> Review of the ESBM method Semi-structured interviews, more details can be found in section 2.3.1 	5
Rq. 3: What should be the contents of the ESBM deployment process?	<ul style="list-style-type: none"> A structured literature study will be conducted, following the guidelines by (Webster & Watson, 2002) to identify the relevant literature Semi-structured interviews, more details can be found in section 2.3.1 	6
Rq. 4: Does the ESBM method attain its objectives when being deployed in organizations	<ul style="list-style-type: none"> Using Technical Action Research, see chapter 4 and more specific section 4.3.3 for details 	7

2.3.1. Interviews

The ESBM method focusses on being usable by organizations. To find suitable means for deploying the ESBM method, this research uses practitioner's knowledge from experts at KPMG next to information found in literature. The experts with whom the interviews were held, are all consultants who regularly work on ES implementations, business cases, group sessions or combinations of those activities. The interview design is inspired by Yin (2003). Nine interviews, with ten participants in total were conducted, each lasting approximately one hour. The main goals of the interviews were to verify the contents and determine how the ESBM method could best be deployed. A more detailed description, including the questions used can be found in

Appendix A: Interviews on method deployment

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3. The ES benefits management method

The ES Benefits Management (ESBM) method was originally developed by Oude Maatman (2010) as a method to assist organizations in determining the benefits for a business case of an ES implementation. The initial validation of the ESBM method only consisted of expert opinions, thus this research is set out to enhance the validation of the method. Before the validation process can start, this chapter provides the reader with an overview of the ESBM method as it is the subject of this research. The overview will start with the background (3.1) from which the desire originated to develop the ESBM method. Based on the IT benefits management method (Ward & Daniel, 2006; Ward, et al., 2008; Ward & Peppard, 2002) the ESBM method was developed. A thorough evaluation of the resulting method by business experts provided us with the ESBM. The full ESBM method can be found in Appendix B: benefit determination for ES implementation business cases, the four main steps of the ESBM are shown in section 3.2. Naturally the ESBM method cannot be used in all situations, so the sections provide the context in which the method can be used (3.3). The structure of this chapter is also shown in Figure 3.

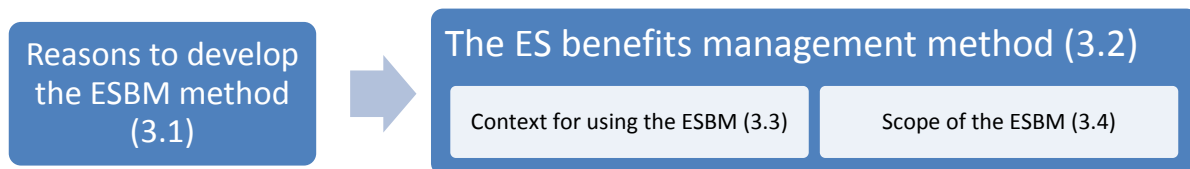


Figure 3 Structure of chapter 3

3.1. Reasons for not using existing methods

Unfortunately, little empirical evidence is available on whether organization actually use benefit realization plans (Ashurst, Doherty, & Peppard, 2008). However, most of the theoretical practices were found not to be used at all, or only by a small subgroup of the organizations, because the IT-professionals tend to focus primarily on the delivery of a technical solution, on time, on budget and to specification (Ashurst, et al., 2008; Peppard, et al., 2007) thereby forgetting about benefit realization. Furthermore, the N.A.O. (2006) show that academic benefit realization methods are not translated into effective working practices, this is a clear reason why organizations do not use existing benefit management methods coming from academia. A search for benefits management methods created by organizations by the author of this research did not result in finding one.

Organizations practice benefit management in their own common way, which is not supported by the existing benefit management methods (Ashurst, et al., 2008). Schubert & Williams (2009) even state that it is difficult to assist organizations locate and understand the benefits, due to the large differences in reach and scope of the projects. Chou & Chand (2008) endorse the finding of Ashurst (2008) by stating that methods and best practices are not applicable to each organization and its processes. The balanced scorecard method (Kaplan & Norton, 1996), as adapted by Chand et al. (2005), is a method that values the strategic impact of an ERP. Unfortunately the balanced scorecard method does not help making benefits explicit, as the method does not push the BC creating organization to make their benefits measurable, thereby making the benefits hardly manageable.

According to Schubert and Williams (2009), current methods are not holistic enough and the level of analysis is not based on the reach and scope of ES projects. They found that there is little insight in the motivations and intentions for undertaking an ES projects. When looking at ES implementations,

we see that they are mostly an ongoing process (Davenport, Harris, & Cantrell, 2004), while existing methods do not seek to understand the varying contexts (contextual, temporal, socio/technical and business change) within which ES projects are situated (Schubert & Williams, 2009). Schubert & Williams (2009) also indicate that limited attention has been given to benefits-management and -realization, to assist integrating the different levels and loci of the benefits.

The literature analyzed above shows us that there are several shortcomings in the current benefits management methods, especially when they are to be used for BC creating organizations:

- Current methods lack guidance for the BC creating organizations, even when using methods, determining correct, precise and measurable benefits is either too difficult or too time consuming or both.
- Current methods are not adjusted to the context in which they are used.
- Current methods do not focus on achieving the business change.
- Current methods fail in seeing that an ES implementation is an ongoing process.

3.2. The steps in the ES benefits management method

The full ESBM method can be found in Appendix B: benefit determination for ES implementation business cases. In this section the four main steps of the ESBM method are introduced. These are the four steps that need to be addressed to determine specific and feasible benefits for the ES implementation. For each of the steps the goal of the step is provided to show the context in which the step was created. The four steps are:

1. Identify organizational goals, critical success factors and key performance indicators for the project.

The goal of this step to make sure that everyone is thinking in the same direction. The goals (which are assumed to be given) serve as an input in discussing how to achieve the goals and critical success factors, by what means and with which solution, thereby trying to create consensus amongst the participants.

2. Benefit identification process (complete the template shown in Figure 4, starting on the left, to the right)

The goal of this step is to start a discussion on what benefits can/will be achieved and by what means. Going through each step of the method will help creating a discussion and will thereby make the benefits more clear and precise. It will further ensure that the participants identify all applicable benefits and not just the ones that come first to their minds.

Benefit	Benefit owner	Classification of change	Required business changes	Measurement of effect	Time span	Probability
		Do new things (grow the business, transform the business):	Process level:	↑	Financial:	
			People level:		Quantifiable:	
	Subject matter expert	Do things better, cheaper or faster:	Organization level:		Measureable:	Frequency
		Stop doing things:	Technology level:		Oberservable:	



Figure 4 Benefit identification template

3. Connect the benefits found in step 2 to the goals found in step 1, to make sure that the project is meeting its goals.

The goal of this step is to make sure that the benefits match with the initial goals of the business case. By trying to connect the benefits to the goals it becomes clear whether each goal can and will be achieved and by what means (benefits).

4. Determine the interdependence between the benefits.

The goal of this step is to make sure that there are not benefits in the business case that exclude each other. This step is also beneficial for determining the importance of the benefits and assigning a sequence in achieving the benefits.

3.3. Context of the ESBM method

The ESBM method is prepared for ES implementations. As mentioned in chapter 1, there are a number of characteristics that make ES implementations distinct:

- High complexity
- Core process involvement (high focus on business process logic and best practices)
- Cross functional integration of business processes (integration of information and functional processes)
- Enterprise wide database

The method is built to suit these specific characteristics by marshaling viewpoint throughout the entire organization, however the execution setting (i.e. workshop) is of more importance. The goal of the method is to start and enhance the discussion about achieving benefits by implementing an ES. The method is flexible in its application, it can be used when requested and provides the user with the help (s)he needs.

Enhancing the discussion on determining and achieving benefits requires the input from several viewpoints. Reviewing the ESBM method provides us six required viewpoints:

- Benefit owner (collects the results, approves changes)
- Project manager (has knowledge of the project and its context)
- Subject matter expert (has thorough knowledge of the business processes and the impact of change on them)
- ES expert (has thorough knowledge of the capabilities of the ES that is to be implemented)
- IT-maintenance expert (has thorough knowledge of the IT-maintenance process and its capabilities)
- Financial expert (knows and interprets the organization's financials, able to help quantifying)

Literature does not provide insights, neither does the ESBM method, on which viewpoints are more important than others. However based on experience at KPMG, the first four viewpoint seem to be the most important for a good business case.

The viewpoints shown above will result in participants who will come from several different disciplines within the organization to represent their viewpoint. Combining this non-homogenous group with the ES characteristics results in a complex project environment. Potentially the most complicating factor will be that the ESBM method still requires open discussion and collaboration between the persons who represent the viewpoints. The resulting context will most likely contain

issues which need to be solved and priorities which need to be determined, while trying to determine realistic possibilities.

An important aspect of the context of the ESBM method is the information provision it generates. The ESBM method could provide participants (the viewpoints) with too much or too detailed information, which might cause political issues. The user of the method should be aware of this when high level information is required or the outcomes are shown to indirectly involved people.

3.3.1. Limitations of the ESBM method

The ESBM method will only consider the benefits of implementing an ES that are identified during the business case development process. This means that the cost should be included in the cost calculation of the business case and are therefore out of focus for the ESBM method. The method does not provide guidelines that can be used to identify the reasons and goals behind a project. The reasons and goals to undertake the project are considered as given and will only be used to make the benefits more clear.

3.3.2. Potential areas to use the ESBM method

Basically the ESBM method can be used for all ES projects, for instance:

- Global ES implementations
- Local roll-outs of ES systems
- Implementation of ES modules
- ES consolidation projects
- ES upgrades

4. How to validate the ES-benefits management method

The previous chapter explains the ESBM method. This research sets out to validate the ESBM method. Validating the ESBM method is required to make sure it reaches its goals of facilitating and simplifying the determination and management of benefits for ES implementation projects. A validation method could be used to structure the validation of the ESBM method, where a validation method is defined as a research method which can be used for validation purposes.

The goal of this chapter is to find a validation method which applicable to validate the ES benefit management method. To achieve this goal, we will first determine the requirements of the ESBM method for selecting an appropriate validation method (4.1). Based on these requirements we will select an appropriate validation method in the beginning of section 4.2 (4.2.1.) In the remainder of 4.2 the selected validation method (action research) will be further defined to the more specific Technical Action Research (TAR) (4.2.2). The design and contents of the TAR will then be discussed in section 4.3 and will thereby answer the research question: how to validate the ES-benefits management method? The structure of the chapter is illustrated in Figure 5.

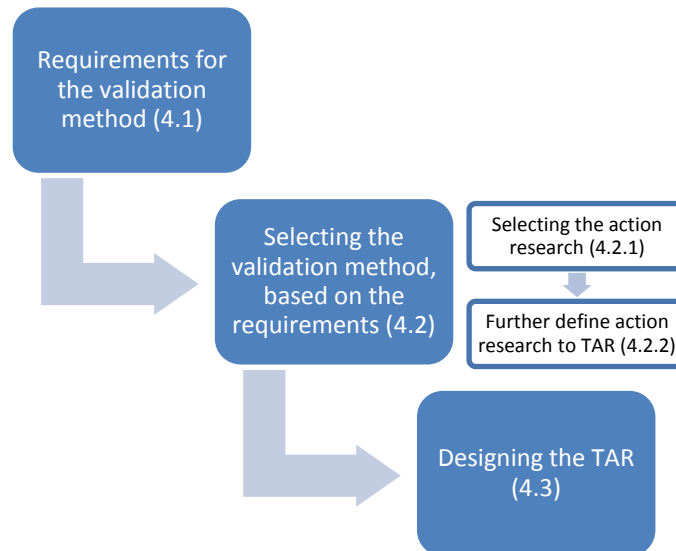


Figure 5 Structure of chapter 4

4.1. Requirements of the ESBM method

The ESBM method is designed to facilitate and simplify determining and managing benefits for an ES business case. The goal of the ESBM method provides us with two important aspects for choosing the validation method: the ESBM method is a design artifact and the method is designed to facilitate ES (business case) practitioners. The first aspect implies that the validation method should treat the ESBM method as an artifact that has been designed from scratch (1). This means we can use design science literature for testing and reviewing the design of the ESBM method. The second aspect implies that the ESBM method can only be tested with and by practitioners. Considering the target group, testing the method in the lab runs out as an option, it has to be tested in an ES implementation setting in which a business case needs to be developed (2).

One of the main underlying assumptions of the ESBM method is creating synergy by combining several viewpoints into one discussion. Without the discussion, the ESBM method is merely a four

step blanks exercise. We can derive two requirements for determining the validation method from this assumption. The first requirement would be that the viewpoints (e.g. subject matter expert, benefit owner, IT-maintenance expert, ES-expert, financial expert or project manager) will have to be represented by knowledgeable persons on the project for which the ESBM method is used (3). Discussing the benefits of project X without, for instance the subject matter expert of project X, will greatly reduce the outcomes of the ESBM method. The second requirement would be that the discussion will have to be facilitated. This requires a facilitator with knowledge of the ESBM method, who is independent of the project (4). A facilitator who is not independent would risk to direct (or limit) the outcomes instead of only directing the process. Additionally, without knowledge of the ESBM method, following the process defined by the ESBM method could become more important than acquiring results by the participants.

This leads us to the following four requirements for selecting the validation method:

1. The ESBM method has to be treated as a design artifact
2. The ESBM method has to be tested in the field
3. Persons which are knowledgeable on the project will have to represent the viewpoints
4. An independent (from the project) facilitator is required.

These requirements will be used to select a suitable validation research method in the next section.

4.2. Selecting the validation method

To enhance the read of this section it has been split up in two sections. The first covers the selection of the appropriate validation technique (4.2.1), the second covers the selection of the appropriate type within the selected validation method (4.2.2).

4.2.1. Using the requirements

Requirement 1 (treat as a design artifact) provides us with an important insight for the validation method. Given that the ESBM method is a design artifact, design science literature can be used to find validation methods. Design science is defined by (Wieringa, 2009a) as attempts to create things that serve human purposes. He places design science in the context in which (1) business needs motivate the development of validated artifacts that meet those needs, and in which (2) the development of justified theories about these artifacts produces knowledge that can be added to the shared knowledge base of design scientists. The ESBM method is based on the needs of organizations to improving the benefits aspect of the ES business case, building the ESBM method and validating it in this research contributes to the second aspect of the design science. This makes design science literature suited to search for validation methods. Several research methods are used to validate the designs in design science literature. Table 2 provides an overview of the most used validation methods in design science. The table shows the validation methods come from Wieringa (2008), Zekowitz and Wallace (1997) and Hevner, March, Park & Ram (2004).

Applying requirement 2 (test the ESBM method in the field) to the validation methods proposed in Table 2 eliminates using the analysis, aggregation research or simulation, as all of these use the lab to collect data. Requirement 3 (viewpoints will be represented by knowledgeable persons) can be translated to the control of the environment. The specific persons required by the ESBM method (i.e. subject matter expert, benefit owner) together determine the environment in which the ESBM method will be executed. The need for specific persons reduces / negates the amount of control the

Table 2 Overview of most used validation methods for design sciences by Wieringa (2008), Zelkowitz and Wallace (1997) and (in italics) Hevner et al. (2004)

	Unit of data collection (UDC)	Environment of data collection	Control of UDC	Control of environment	Intrusion when collecting data	Subject involvement
Action research	Unit of study	Field	Yes	No	High	High
Aggregation research (description)	Scientific literature	Lab	No	Yes	None	None
Analysis	Unit of study	Lab	Yes	Yes	High	High
Case study (observation)	Small sample	Field	No	No	Low	Any
Experiment	Sample or model	Lab or field	Yes	Yes	Any	Low
Simulation	Unit of study	Lab	Yes	Yes	High	High
Survey	Sample	Field	No	No	Low	Low

researcher can execute on the environment. Therefore, applying requirement 3 to Table 2 further eliminates the experiment as appropriate validation method. This leaves us with three remaining options: survey, case study and action research. Applying requirement 4 (independent facilitator) to select one of these is more complex. An independent facilitator first needs to be found and needs to be trained on the ESBM method. However finding a cooperative facilitator, for a not yet fully validated method, is nearly impossible. For validating the ESBM method, we therefore have to reside to using the author of this research as a facilitator. While validating, this provides the author to exercise control over the Unit of Data Collection (UDC). Accordingly applying the last requirement to Table 2 (control of UDC is true) results in only one remaining option: action research.

4.2.2. Selecting the type of action research

Baskerville (1997) combines definitions of Rapoport (1970) and (Susman & Evered, 1978) to derive the following definition of action research: action research aims to contribute to the practical concerns of people in an immediate problematic situation, to the goals of social science by joint collaboration within a mutually acceptable ethical framework and to develop the self-help competencies of people facing problems. Action research involves the researcher(s) working with members of an organization over a matter which is of genuine concern to them and in which there is an intent by the organization members to take action, based on this intervention (Eden & Huxham, 2002). In the action research literature two different categorizations of action research can be found, an overview of both is presented in Table 3.

Eight types of action research could be used to validate the ESBM method (see Table 3). To determine what type of action research can best be used, we revisit the goal of this research and the motivation for constructing the ES-benefits management method. Constructing the ESBM method is motivated by the low satisfaction organizations have in their ability to identify and managing benefits, while current benefit management methods are not used (Oude Maatman, 2010). The goal of this research is validating the ESBM method in a field setting using a suitable validation approach is important to make sure these problems are countered.

Table 3 Categorizations of action research

By	Categorization	Short description
Grundy (1982)	Technical interest	Oriented towards functional improvement in terms of its success in changing particular outcomes of practices (Kemmis, 2001)
	Practical interest	Technical interest, with an additional aim to inform the practical decision making (process) of researchers (Kemmis, 2001)
	Emancipatory interest	Practical interest, with an additional aim to assist researchers to arrive at a critique of their work and work setting (Kemmis, 2001)
Huang (2010)	Action Science (AS)	A form of social practice which integrates both the production and use of knowledge for the purpose of promoting learning with and among individuals and systems whose work is characterized by uniqueness, uncertainty and instability. (Friedman, 2001)
	Cooperative inquiry (CI)	Research with people, active participants are involved as co-researchers (Heron, 1996)
	Participatory action research (PAR)	Seeks to understand and improve the world by changing it. At its heart is collective, self-reflective inquiry that researchers and participants undertake, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves (Baum, MacDougall, & Smith, 2006)
	Developmental action inquiry (DAI)	A way of simultaneously conducting action and inquiry as a disciplined leadership practice that increases the wider effectiveness of our actions. (Torbert & Associates, 2004)
	Living theory approach (LTA)	We gather data and generate evidence to support our claims that we know what we are doing and why we are doing it (our theories of practice) and we test these knowledge claims for their validity through the critical feedback of others. These theories are our living theories. (Whitehead & McNiff, 2006)

In Grundy's categorization each consecutive category includes an additional research goal to the previous step. Aligning these goals with the goal of the research and the motivation for the ESBM method shows us that this research's goal is purely functional, thereby reducing the possible options to just one in Grundy's terms: technical (interest) action research.

In Huang's categorization it is more difficult to find the connection/relation between the different categories. The first three (AS, CI, PAR) actively involve the participants within the research itself, while the latter (DAI, LTA) seem to aim at evaluating an action performed to improve its result in the future. None of these connections relate to the goal or the motivation of this research of both this research and the ESBM method.

The review of the types of action research provided in Table 3 therefore leaves us with one possible option, technical (interest) action research. Designing the technical action research is the last step and will be explained in the next section.

4.3. Designing the technical action research

Wieringa (2008, 2009b) describes Technical Action Research (TAR) as helping a client in the field by using the technique developed by the researcher. As the reason for **testing** (instead of applying) it in the field, Wieringa (2009b) notes that the researcher is the only person able and ready to use the technique. Using TAR for validating the ESBM method, therefore results in applying it in an ES implementation project. Wieringa (2008, 2009b) uses the engineering cycle to structure and design the TAR, that is shown in Table 4. Table 4 also shows us that step 4 in the cycle consists of a nested engineering cycle, in which each of its steps are translated to suit the specific project it is applied to. The application of the engineering steps to this specific research will be described per step in the next few paragraphs.

Table 4 Overview of the TAR engineering cycle (Wieringa, 2008, 2009b)

Step in the engineering cycle	Description
1. Research problem	Does my technique work?
2. Research design	Acquire an action case, identify problem to be solved in the case
3. Design validation	Will this help to validate the artifact? Make sure the context of the case and the technique are suited for each other
4. Do the research	Perform the project
4.1. Problem investigation	What are the client's goals? Diagnose of the problem
4.2. Solution design	Adapt artifact to the problem
4.3. Design validation	Will this help the client?
4.4. Design implementation	Execute the design
4.5. Implementation evaluation	Client's goals achieved?
5. Analyze the results	What effects? Why? Does this satisfy our criteria? Trade-offs? Why? Sensitivity? Why?

4.3.1. Step 1: Research problem

The first step in the engineering cycle (research problem) is the main research question of this research: Does the IT-benefit management method create accurate and feasible benefits, while remaining operational for the adopting organizations.

4.3.2. Step 2: Research design

For the second step in the engineering cycle we search for cases to validate the ESBM method. The search has resulted in applying the ESBM method in three projects in which a business case must be written for an ES implementation. The three cases are:

- A Planning project for a global provider of audit and consultancy services (a planning module for an ERP has to be chosen) (Referred to as Company A in the remainder of the document)
- An ERP implementation at global supplier of office supplies (Referred to as Company B in the remainder of the document)
- A SAP consolidation and upgrade project at a global provider of power products, systems and services (Referred to as Company C in the remainder of the document)

The benefits for these cases are only known on a high level and need to be further explicated. More details on the cases can be found in section 7.1.1, 7.1.2 and 7.1.3 respectively.

4.3.3. Step 3: Design validation

The application of the design validation (step 3) is twofold. The first design validation aspect determines whether the ESBM method will actually help creating a better quality of the benefits section of the business case. The second aspect makes sure the cases showed in step 2 are actually suited to validate the ESBM method. We will start with the first aspect.

To determine the validity of the ESBM method we need to set indicators that combined show whether the ESBM method reaches its goals. (Andresen et al., 2000; Divendal, 2010; Ward, et al., 2007) served as starting point for the indicators. The results found in literature were then discussed with the research supervisors. First, a list of item levels to test the ESBM method was designed. The list of items is sorted by means of induction, reasoning and structuring of the items involved. For each of the items then indicators were added that, when combined, show the status of items. The items and their indicators are shown in Figure 6. The indicators have been translated to a questionnaire (see Appendix C: Benefits management questionnaire), that will be provided to the case participants before, during and after working with the ESBM method. In Figure 6 the questionnaire items are grouped per indicator.

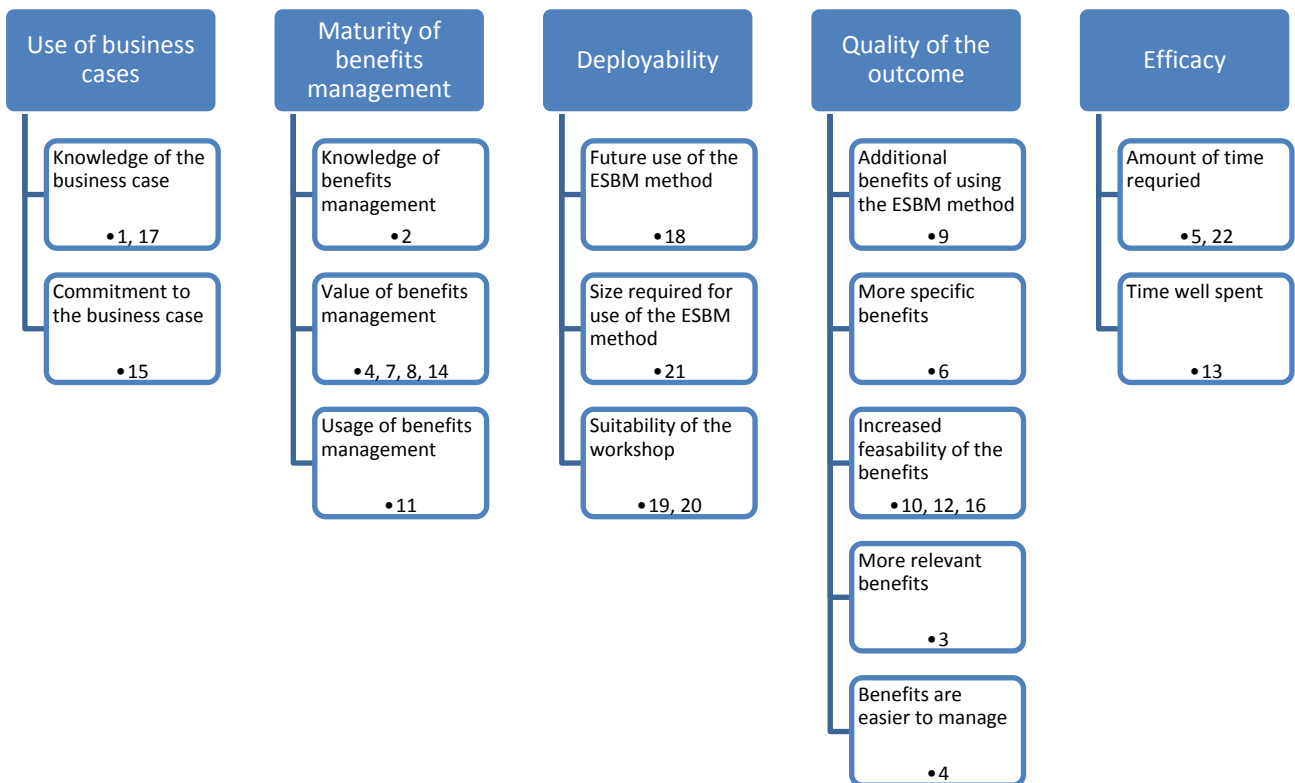


Figure 6 Validation items, their indicators. The numbers show the corresponding questionnaire items (found in Appendix B)

The second design validation aspect determines whether the cases, to be used, are appropriate to validate the ESBM method. The ESBM method (Oude Maatman, 2010) served as input for discussions with fellow researchers and KPMG experts to find criteria for selecting appropriate cases. The result is the following list of criteria that need to be satisfied by the cases to be valid for this research:

- The project has to be an ES implementation project
- The business case of the ES project should be created for the project (by means of the ESBM method)
- The people required by the ESBM method need to be available and willing to participate, meaning the following input and roles (between brackets):
 - Business / Process knowledge (subject matter expert)
 - (future) IT-maintenance knowledge (maintenance expert)
 - ES capability knowledge(ES expert)
 - Financial knowledge(financial expert)
 - Project knowledge (project manager)
 - Decision authority on projects and changes (benefit owner)

Applying the criteria found above to potential cases resulted in the cases mentioned in step 2 (Company A, Company B and Company C).

4.3.4. Step 4: Do the research

All of the steps mentioned in step 4 will be used when applying the ESBM method on the Company A, Company B and Company C cases. Most importantly the goals of the projects will be used to review the validity of the ESBM method. However, the questions shown in step 4 of the engineering cycle need to be made more specific for this research and the real-life cases on which they will be posed. The result of the translation can be seen in Table 5. The answers to these questions will be shown in chapter 7.

Table 5 Applying the nested engineering cycle steps to this research

Question / task in the nested engineering cycle	Question(s) for this research
What are the clients goals, what is the diagnose of the problem?	What does the organization want to achieve by implementing the ES and why does the organization want to use the ESBM method
Will this help the client?	Will applying the ESBM method help the organization to find additional, more specific and more feasible benefits?
Adapt artifact to the problem	What needs to be changed to the deployment process to make the ESBM method suitable for the organization's project?
Execute the design	What are the results of applying the ESBM method for the organization?
Client's goals achieved?	Did the results of applying the ESBM method achieve the goals stated by the organization?

4.3.5. Step 5: Analyze the results

The outcomes and evaluations of the project will be analyzed according to the indicators from step 2 of the engineering cycle and the project goals. The base of the analysis will be formed by the questionnaire (see Appendix C: Benefits management questionnaire) and a qualitative evaluation of the results. The questionnaire will be used on multiple occasions: before (zero-measurement), during (measurement of intermediate results) and after (final results) the use of the ESBM method.

5. Selecting a suitable deployment process

The ESBM method from chapter 3 is currently in a conceptual format. In the previous chapter we have seen that we can validate the ESBM method by putting it in practice (applying TAR). Within this chapter we will explore and determine the suitable form for deploying the ESBM method in a project.

Oxford dictionaries (2011) define process as a series of actions or steps taken in order to achieve a particular end. Using this for deploying the ESBM method results in the following definition of the deployment process: the set of actions to make the ESBM method ready for use. In Table 6 you can find some examples of potential deployment processes as found in requirements elicitation literature.

Table 6 Overview of potential deployment processes

	(Cooke, 1994)	(Davis, Dieste, Hickey, Juristo, & Moreno, 2006)	(Goguen & Linde, 1993)	(Lauesen, 2002b)	(Maiden & Rugg, 1996)
Potential deployment processes	<ul style="list-style-type: none"> • Observations • Interviews • Verbal reports • Non-verbal reports 	<ul style="list-style-type: none"> • Interviewing • Work groups 	<ul style="list-style-type: none"> • Questionnaire interviews • Open ended interviews • Focus and application development groups • Discussion 	<ul style="list-style-type: none"> • (Group) interview • Task demo • Questionnaires • Brainstorm • Focus groups • Domain workshops • Design workshops • Pilot experiments 	<ul style="list-style-type: none"> • Unstructured interviews • Structured interviews • Brainstorming • Rapid prototyping • RAD workshops • Ethnographic workshops

The examples show us that literature does not agree on the aggregation level of the deployment processes. Some are high level deployment processes (interviews, work groups, workshops etc.) other are more specific techniques to be used within these high level processes (questionnaire, discussion, brainstorming). Consolidating the list in Table 6 to find the high level deployment processes results in: surveys (interviewing, questionnaires), reports (observations, (non-)verbal reports), work groups (discussion, focus and application development groups, brainstorming, rapid prototyping), piloting (task demo, pilot experiments) and workshops (domain workshops, design workshops, RAD workshops, ethnographic workshops). One of these will be chosen in this chapter.

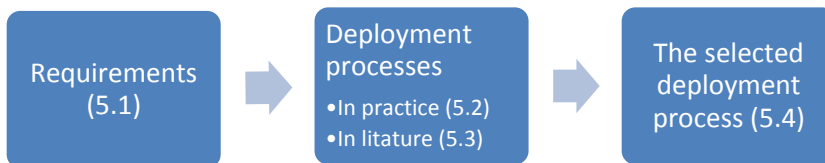


Figure 7 Structure of chapter 5

To do this we will first review the ESBM method to determine the requirements that can be used to select one of the high level deployment processes (5.1). In the next two sections the elements of the deployment process will be selected. To select the deployment process, we first consult several practitioners to find their preferred deployment process (5.2). Now the preferred deployment process for practitioners is known, the results will have to be verified. Section 5.3 will do this by using requirements and methodology literature. The chapter will end with a conclusion, that will give answer to the research question 2: In which way can the IT benefits management method be deployed for use in an organization? The structure of this chapter is also illustrated in Figure 7.

5.1. Requirements of the ESBM method

The requirements of the ESBM method will be used to select suitable elements for the deployment process, this section is used to construct these requirements. The construction of requirements will be based on an in depth analysis of the ESBM method and an analysis of the ESBM method by experts in the ES benefits/business case field (more on the interviews can be found in 2.3.1 and

Appendix A: Interviews on method deployment). The analysis of the ESBM method will be organized around Checkland's description of an organized enquiry (Peter Checkland, 1985). An organized enquiry exists of three components: an intellectual framework, a methodology and an application area.

5.1.1. The intellectual framework of the ESBM method

The intellectual framework is the philosophy behind the enquiry. The philosophy guides and constraints the enquiry in its application (Peter Checkland, 1985). For the ESBM method the philosophy behind the methodology can be extracted from the goal and the steps of the method. The first would be that creating discussion creates new insights and additional information (1), this is the basis of the ESBM method. The second would be that cooperating and combining between viewpoints creates synergy when specifying benefits (2). The method uses this to make sure the benefits are made explicit and feasible from all viewpoints. The third would be that involving people creates commitment (3). The method involves experts in at least five knowledge areas to create the benefits component of the business case. Each of these experts will see their own vision represented in the results, which makes them more involved with (completing) the project. The fourth and last would be that structuring an informal process helps achieving better results (4). The method breaks the benefit determination process into four big processes that each consist of several small steps, by doing so it guides (structures) the way of thinking of the participants. Making sure multiple viewpoints are examined on multiple benefits aspects will increase the quality of the benefits. The four elements found in this section form the philosophy behind the ESBM method, each comprises its own requirement on the deployment process:

1. The technique should be able to act as a discussion enabler
2. The technique should be group based and able to combine several viewpoints
3. The technique should enable and motivate participants to produce results
4. The technique should be able to be executed in a structured setting

5.1.2. The methodology of the ESBM method

The methodology is the operationalization of the framework into a set of prescriptions, guidelines, techniques and methods (Peter Checkland, 1985). Even though the ESBM method misses the deployment process, it contains a lot of prescriptions, guidelines and techniques. For determining the requirements following from the methodology of the ESBM method, the method is reviewed on its most essential guidelines. The guidelines and techniques are focused around five main areas: determining project goals, finding benefits, determining the required change, making the benefits measurable and determining the dependencies between the benefits. The first guideline from the method is that the facilitator is flexible to choose whether to use the techniques included in these areas (5). For determining the required change, the participants should be able to determine the changes required to meet the benefit and whether these are changes that can be executed (6), this is guideline two. The third guideline is that several experts (viewpoints) are required to provide knowledge and input to be able to complete the benefit template (7). These three guidelines result in the following requirements posed by the methodology of the ESBM method:

5. The setup of the deployment process should be flexible in its use
6. The participants should have authority to decide on changes

7. The deployment process should be easy understandable for persons from several different business areas

5.1.3. The application area of the ESBM method

The application area is the part of the world that is researched by the enquiry (Peter Checkland, 1985), meaning the phase and/or subject and/or time in which the enquiry will research. For the ESBM method this means that this should be the start of an ES project. The ES project will have a cause and most likely a vision. Based on the cause/vision, the goals must be set, the scope must be determined and input should be gathered to be able to decide whether to start the project. One of the ES project characteristics, is the core business process involvement, which results in impact on the strategy of the organization (8). This results in the only requirement originating from the application area:

8. The deployment process should be feasible for the strategic and tactical level of an organization

5.1.4. Practitioner requirements on the deployment process

During the interview (see section 2.3.1 for more information) the experts were asked to identify requirements for deploying the ESBM method. They received an open question and only had the ESBM method to base their thoughts on. The experts have selected several features of the method that should be addressed by the deployment technique. The first of these features is the combination of different views by the method (treated in requirement 2). The second is the open and honest communication required to facilitate such a combination of views (9). The third is creating an equal level and status between the participants, to create an atmosphere in which each participant is willing to speak (10). The fourth and last feature the experts selected is the formalization of an informal process by the ESBM method (treated in requirement 4). This results in the following two requirements to be added to the list:

9. The deployment process should enable open and honest communication
10. The deployment process should facilitate creating equal level and status amongst the participants

5.2. Deployment processes in practice

To find the best deployment process for the ESBM method we first consult experts with experience in the ES-business case field. During the interview (see section 2.3.1) the experts were handed the ESBM method and they received two open-ended questions: what ways do you see to deploy the method and how would you deploy the method? Their opinions on both questions are summarized in the following three sections, more details on these interviews can be found in

Appendix A: Interviews on method deployment.

The experts have unanimously chosen for a workshop as the main element of the deployment process for the ESBM method. Their main reasons for choosing the workshop are: creation of group dynamics between participants, extraction of tacit business knowledge and value of hearing multiple viewpoints. The experts suggested three possible levels to conduct the workshop on: the business model (what does the organization do to earn money), the process model (the business processes within the organization) and the application model (the information systems within the organization). The three levels (and their respective changes) are illustrated in Figure 8.

The experts indicate that the business model often is fixed (even at ES projects) so the workshop should focus on the process model level and keeping the process model aligned with the business model. According to the experts, placing the workshop on the process level reduces the risk, eases the effort required to gather all process owners and tightens the scope of the workshop.

To be able to conduct a workshop on the process model level, the experts suggest to conduct a high level workshop first. This high level workshop is used to identify the processes which will be treated in the process specific workshops. The process specific workshops should then focus on determining the benefits and determining the required changes to achieve these benefits.

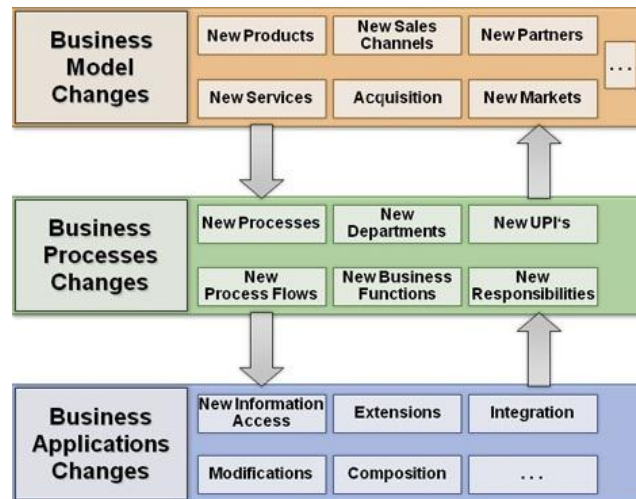


Figure 8 Three levels to conduct the workshop on

The experts state that the workshop will require a considerable amount of time. They suggest to create multiple workshops, to be able to keep the attention of the participants. Next to the workshops, the experts would also add an introduction round for the participants. The introduction round, in the form of an 1 on 1 interview (facilitator and participant), would help the participants to prepare the workshop. Preparing the workshop would improve the amount and quality of the content of the workshop.

The previous three paragraphs summarized the experts insights in deploying the ESBM method, is it desirable to implement them all? Choosing the workshop as the deployment process seems obvious, given the reasoning. However, the experts do not provide us with the specific type of workshop, their advice on the deployment process is on a high abstraction level. Given their reasoning behind the workshop, it seems that they would use the workshop as problem solving exercise. When reviewing this definition in literature, we can find a match with Sork's definition of a workshop: "a relatively short-term, intensive, problem-focused learning experience that actively involves participants in the identification and analysis of problems and in the development of solutions" (Sork, 1984).

The identified levels (business, process, application) for a workshop seem arbitrary, several other classifications would be possible (e.g. Archimate (Lankhorst, Proper, & Jonkers, 2009), GRAAL (Van Eck, Blanken, & Wieringa, 2004)). However, actually deploying the ESBM method on the process level

does seem to improve the usability of the ESBM method. It becomes easier to gather the required participants and participants are most likely more knowledgeable about the potential benefits within a specific process than on the level of the entire organization. We do however need to keep in mind that the process level remains aligned with the strategy of the organization.

Adding the preparation round before the workshop is a valuable addition to the deployment process. Preparing the participants before starting the ESBM method would ease the start of the workshop and probably increase their efficiency during the workshop.

5.3. Deployment processes in literature

The experts selected multiple workshops with an interview round as the deployment process for the ESBM method. This leaves us with the question what deployment processes literature provides for us. To study this we will consult two different literature topics, each related on its own way to the ESBM method. The result will be a selection of the deployment process from literature. The first source is literature on requirements elicitation. Where requirements elicitation focusses on finding the requirements for a future project, the ESBM method focusses on the benefits of this future method. Both have difficulties in producing the output because many factors of the process are uncertain or unclear. This makes the requirements literature ideal to get input and insights in deploying the ESBM method. The second topic area is on methodologies. Even though the ES benefit management method is no explicit methodology, it shares many of its aspects with methodology aspects, such as the area in which they are used and the goals methodologies aims at.

The section is divided in two main parts, the requirements elicitation literature (5.3.1) and the methodology literature (5.3.2). Each of these parts first treats the deployment processes, followed by examples of the deployment processes in the specific literature topics.

5.3.1. Deployment processes from the requirements elicitation literature

Requirements elicitation is the process of finding and formulating requirements (Lauesen, 2002a). Requirements elicitation is regarded as one of the most important steps in building a software system, because during this stage it is decided precisely what needs to be built. This requires practitioners to deal with ambiguity, informality, incompleteness and inconsistency (Hannola, Nikula, Tuominen, Kälviäinen, & Leino, 2008). What makes it even more challenging is that the organization has knowledge about business and organizational needs, while the requirements team has knowledge about technical possibilities. This makes the process of producing requirements from these two different kinds of knowledge necessarily conversational (Goguen & Linde, 1993). Basically requirements elicitation is about finding input as early as possible in the process to determine the goals and capabilities of the future system.

Benefits management is the process of organizing and managing such that the potential benefits arising from the use of information technology are actually realized (Ward & Daniel, 2006) for this study, realizing is limited to the project duration. Before realizing benefits, one should first determine what benefits can be achieved by implementing an ES. This requires determining the capabilities of the system, possible improvements in the business processes and/or potential new business opportunities. Even though this is required, Schubert and Williams (2009) found that there is little insight in the (detailed) motivations and intentions for undertaking ES projects. This means that ES projects are undertaken based on fuzzy and ill-defined problems, resulting in a fail to achieve the benefits.

Requirements are difficult to understand and define (Avison & Fitzgerald, 2006), which is similar to benefits. Both are should be determined at the start of a project and (help to) determine the goals to be reached by the project. This makes requirements elicitation literature a potential source for deployment processes. The requirements elicitation can be seen as a mature field, meaning that literature is present to help you selecting the right technique. In the next section we will use elicitation guideline literature to find the most suitable deployment technique. In the last section an elaboration of the selected deployment technique will be presented, to view the possibilities in this field.

5.3.1.1. Selecting deployment processes

According to Davis et al. (2006) the elicitation technique to be used is determined by the type of knowledge, the quantity of information and the elicitation efficiency determine the elicitation technique to be used. Hannola et al. (2008) specify it more explicit: "The choice of a specific elicitation technique will vary, based on the time and resources available to the requirements analyst, the kind of information that needs to be elicited, the type of application, the skill and sophistication of the development team and the customer, the scale of the problem, the technology used, and the criticality and uniqueness of the application." However both papers neglect to provide us with an overview of which technique is to be used in what situation. (Lauesen, 2002b) takes a different route, the elicitation technique should be chosen on how well they are suited to deliver specific results. We should therefore first consider which "work products" (e.g. present work, future situation, conflict resolution, priorities) we would like to achieve. Based on the ESBM method and its requirements we would like to know: the current situation, goals to be set, the future situation, realistic benefits and required changes to reach the benefits.

Applying these knowledge goals on methods for acquiring requirements from stakeholders provided by (Maiden & Rugg, 1996), only one option remains: RAD workshop. The RAD workshop is most suited for acquiring knowledge about the future system, the other options either fail to enable discussion, to be performed with(in) groups or to operate on a strategic level.

Hannola et al. (2008) provides us with a few examples of elicitation methods that can be used within a group: requirements workshops, brainstorming, consensus decision making and focus groups. While these are all group techniques (one of the main requirements), they are not yet rated on their applicability for the "work products" we would like to see. Inserting these elements in Lauesen's survey of elicitation techniques, only one technique remains: the domain workshop (Lauesen, 2002b). In domain workshops a team maps the business processes, resulting in a description of the domain in which the system must operate and potentially the goals and critical issues of the system.

Lauesen describes there are many types of workshops and that the term is a blend of brainstorming sessions and prototyping sessions. During the workshops the participants co-operate to analyze or design something. Regarding the ESBM method, the cooperation and discussion amongst participants in these workshops would make the workshop ideally suited for deploying the ESBM method.

5.3.1.2. Workshop examples in the requirements elicitation literature

In her work as a consultant on business and IT project, Gottesdiener (2002; 2003) has held various collaborative workshops. She states that these workshops can be used for many purposes: e.g. outline the project's vision and scope, create a release strategy or defining requirements on different

abstraction levels (E. Gottesdiener, 2003). According to her the collaborative workshop creates an efficient, controlled, and dynamic setting where you can quickly elicit, prioritize, and agree on a set of high quality project requirements.

For their research on the improvement of the current requirements capture process in a Finnish telecommunications company, Hannola et al. (2008) used a workshop based on the nominal group technique (NGT). The NGT is a structured problem-solving or idea-generating strategy in which individual's ideas are gathered and combined in a face-to-face, non-threatening group situation. According to McGraw & Harbison (1997) the NGT technique is often used when a group needs to compare, select, or rank solutions or advantages and disadvantages of ideas.

Moens, Broerse, Gast & Bunders (2010) used the Roundtable (RT) workshop to determine and plan ICT initiatives. The Roundtable (RT) workshop is a participatory approach based on constructive technology assessment (Moens, et al., 2010). The RT workshop focuses on joint problem analysis, visioning, defining priority areas for intervention, and developing annotated ideas on experiments. After applying the RT workshop in a case study, (Moens, et al., 2010), found that personal visits turned out to be essential for a proper briefing of the participating organizations. The personal visits should be used to explain the process of the workshops.

Barbacci et al. (2003) provides another good example of a workshop. The Quality Action Workshop (QAW) is a facilitated method for eliciting and explicitly documenting quality attribute requirements early in the development process. It provides a forum for stakeholders to come to consensus about these drivers. Especially quality attributes are hard to find, understand and define (Barbacci, et al., 2003). The goals of the QAW are (Barbacci, et al., 2003):

- Determining what the precise meaning of quality attributes are—such as modifiability, security, performance, and reliability—in the context of the system being built
- Discover, characterize, and prioritize the key quality attributes before the system is built
- Engage geographically dispersed communities of system stakeholders in a disciplined and repeatable way in the discovery and characterization of quality attributes

5.3.2. Deployment processes from the methodology literature

The methodology literature is focused around software development (Aydin, 2006). In the software development area, several methodologies are present and used, each having its strengths and weaknesses. What makes the methodology so suitable for finding the deployment process is the goal methodologies have. Methodologies are used in software development to create a better end product (1) and to improve (2) and standardize (3) the software development process (Avison & Fitzgerald, 2006). Each of these goals can be directly translated to the goals of the ESBM method. The method wants to increase the feasibility of the benefits (1) by improving the determination and management process (2), thereby structuring the informal process (3). For the remainder of this section we use Checkland's (1981) definition of methodology: a collection of problem-solving methods governed by a set of principles and a common philosophy for solving targeted problems.

5.3.2.1. Selecting deployment processes

Finding the right methodologies is difficult, therefore we used an overview of several methodologies by Avison & Fitzgerald (2006) to find methodologies that match with the requirements described in 5.1. The best match with the requirements is Rapid Application Development (RAD) as it can be used

in strategic projects and is group based. RAD (Martin, 1991) is a combination of techniques and tools and is used to speed up the information systems development process. In the first step RAD focuses on finding and setting the goals for a project. A Joint Requirements Planning (JRP) workshop is used to facilitate this first step (Avison & Fitzgerald, 2006). In the next section the JRP workshop will be described in more detail.

Returning back to the base of the ESBM method provides us with the methodology related strongest to the ESBM method: the IT-benefits method by Ward et al. (2006; 2008; 2002). The IT-benefits method is the foundation of the ES benefits method (Oude Maatman, 2010). The use of the original method is on planning IT-investments and on determining and managing the IT-benefits coming from these IT-investments. Ward & Daniel (2006) describe the use two workshops to initiate a benefits driven investment. Workshops were selected to encourage participation from multiple individuals from both the business and the IT groups.

Both methodologies point in the direction of a workshop. Only the JRP workshop is explicit enough for further use, therefore, it will describe it in the next section.

5.3.2.2. Workshop examples in the methodology literature

The role of the JRP workshop is to identify the high level management requirements of the system at a strategic level. The JRP itself is a creative workshop that amongst others helps to identify and create commitment to the goals of the system, to identify priorities and to eliminate unnecessary functions. The participants in JRP are required to have a combination of business knowledge and specific knowledge, authority and seniority. This combination makes it possible to exceed functional boundaries and business units. A very similar workshop also used in RAD is the Joint Application Design (JAD) workshop. The JAD workshop focusses on the benefits of the system for the business and the users (Avison & Fitzgerald, 2006). JAD and JRP share many similarities, while the main difference between both are the people involved in the workshops. To be able to combine both the RAD and the JRP workshop into one, you therefore have to make sure the right participants are present (Martin, 1991). For the ES benefits management deployment, RAD therefore suggests to use workshops.

5.4. Conclusion

This chapter was set out to select a suitable deployment process for the ESBM method. Before starting the quest to find the deployment process, we first reviewed the ESBM method. Based on the review several requirements were found that should be addressed during the deployment process. Based on these requirements we started the search for a suitable deployment technique. We first interviewed experts, who unanimously provided us with the workshop as their preferred deployment technique for the ESBM method. Additionally the experts suggested to add an interview round to prepare the participants. The next step was to verify, the deployment technique found, in literature. This was done by reviewing literature on the following two topics: requirements elicitation and methodology. Both streams of literature confirm the workshop as the most suitable deployment technique, which results in an interview round and multiple workshops as the deployment process for the ESBM method.

To arrive at the deployment process, both literature and business experts were used. When looking at their contribution to the final results a significant difference can be noted, in favor of business experts. Even when taking into account that business experts were able to propose a deployment

process, literature is short on input the deployment process. The difference increases when looking at the input that was required to arrive at their respective contributions, literature required a time input that was a tenfold of the required input for the business experts. In both literature streams deployment processes are often used in the research, but no explanation is present on how the deployment processes are created. Often, the deployment processes even lack a decent manual.

An extensive search on deployment processes (and workshops more specifically) provided a few workshop examples. The workshop examples found in literature match the description of a workshop by experts, both are aimed at solving a problem. We will therefore use Sork's definition of a workshop: "a relatively short-term, intensive, problem-focused learning experience that actively involves participants in the identification and analysis of problems and in the development of solutions" (Sork, 1984).

6. Designing the workshop

Based on the analysis in chapter 5, we now know that a workshop should be used for deploying the ESBM method. However, the content and process of the workshop remain to be determined. In this chapter the content, structure and process of the workshop will be determined, in other words, we will design the workshop. The structure of the chapter is shown in Figure 9.

Before designing the workshop we need to establish the ground rules for designing the workshop. The ground rules will be the requirements from section 5.1 supplemented by potential deal breakers for the workshop that were identified by experts. The potential deal breakers will be described in 6.1 and will follow the same categories as the workshop guidelines (see Figure 9).

In the search for the workshop in the previous chapter, we have seen several different types of workshops and workshop techniques. These will be used as the base for designing the workshop. The content of those techniques has been split up in two sections: guidelines that are general remarks for designing the workshop (6.2), and procedures that deliver a specific result (6.3). Procedures are defined as: a particular course of action intended to achieve a result (Princeton, 2011). The content for both sections will come from expert interviews and literature sources identified in the previous chapter. Only the relevant sources will be displayed at each aspect, as not all sources treat all aspects.

Each aspect of the guidelines and the procedures section will contain an overview of the results found. The results can be mutually excluding or inappropriate for use in the ES benefits management workshop. We will therefore add a short analysis of the results, to select the guidelines and procedures for the workshop. Within the analysis we will use the requirements from section 5.1 and the potential deal breakers from section 6.1 to review the results. In principle each result will be used in the design of the workshop, therefore only results that are conflicting or are not used will be described in the analysis. The expert guidelines and procedures will take priority over the literature sources when they are conflicting, as literature cannot provide us with the consequences of not using the specific guideline or procedure.

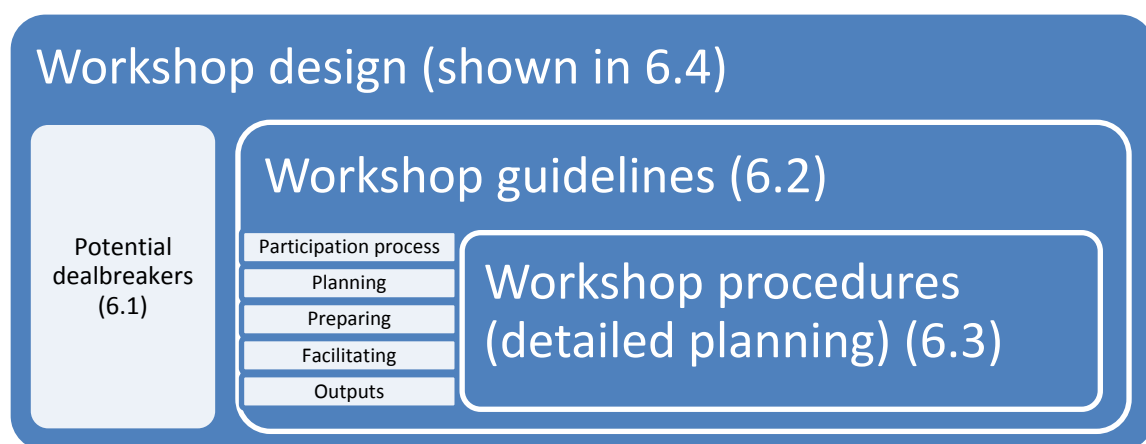


Figure 9 Structure of chapter 6

6.1. Potential deal breakers for the workshop

During the interviews the experts were asked the question: “What could be points of awareness during deployment?”. The answers are essential for designing the workshop, failing to address these points could mean the workshop fails to reach its goal. The structure for the deal breakers is mainly on chronological order, except for the first, the participation process. The participation process is essential for the workshop to be successful and is therefore treated first. The remainder of the sections are chronologically ordered, planning first, preparing next and facilitating the workshop last.

6.1.1. Participation process

According to the experts, most firms tend to implement/replace an ES because they need to. The need originates from the following situations:

- “Their current technology is out of date, which makes maintenance difficult and expensive”
- “The market in which the organization operate demands additional services , these services cannot be delivered with the current technology”
- “The competitors already have the (next level) ERP, we cannot stay behind”

The experts indicate that the subject matter expert could be the person who needs to laid off to achieve the benefit, so make sure he is still willing to cooperate (1). Furthermore the participants present should be capable of making the benefits quantifiable, to do this workshop and its techniques should be comprehensible (2). This results in the following requirements:

1. Explain the value and goal of the workshop and the reason participants join the workshop
2. Use comprehensible techniques

6.1.2. Planning the workshop

Between the storming and the norming stage (see respectively 6.3.2 and 6.3.3) the participants should be able to switch from the opportunistic to the realistic and critical mindset, to be able to create realistic benefits (3). To keep the attention and maintain a high energy level the workshop cannot last longer than 4 hours longer (4). This results in the following requirements:

3. Plan time to let participants switch between mindsets
4. Workshop duration can not exceed 4 hours

6.1.3. Preparing the workshop

For the workshop all participants need to be present. The experts indicate that it is very difficult to set up meetings where each of the required participants is present, especially due to the management level required (5). They also indicate that in most ES projects companies try to minimize the people who know about the project, due to the significant effects it has on the organization. This makes it difficult to reach the participants (6). This results in the following requirements:

5. The results of the workshop should be clear upfront (motivates managers to schedule the workshops)
6. Let the benefit owner determine the people involved in the workshop

6.1.4. Facilitating the workshop

The experts indicate that the benefit aspect should be absolutely clear for all participants if you want the participants to get actively involved in the workshop (7). Furthermore, the type of facilitation is

important to set the right mood for the participants. When the goal is to achieve consensus, the facilitator should focus on the reasoning behind a statement/argument. Before the workshop, the facilitator should try to determine what the current state of affairs is. When the goal is to achieve information, the facilitator should question the participants to find as much information as possible. The setup for the workshop should be more loosely (open) to be able to switch to emerging aspects (8). This results in the following requirements:

7. Benefits aspects should receive considerable attention in the workshop
8. The type of facilitation should be able to be changed during the workshop by the facilitator

6.2. Guidelines for the workshop

The guidelines for the workshop can be seen as general remarks and statements to make the workshop a success, they can be laid on top of the potential dealbreakers. The guidelines are structured around the same pattern as the previous section, as can be seen in Figure 10. The impact of the results for the workshop will be presented at the end of each guideline aspect.

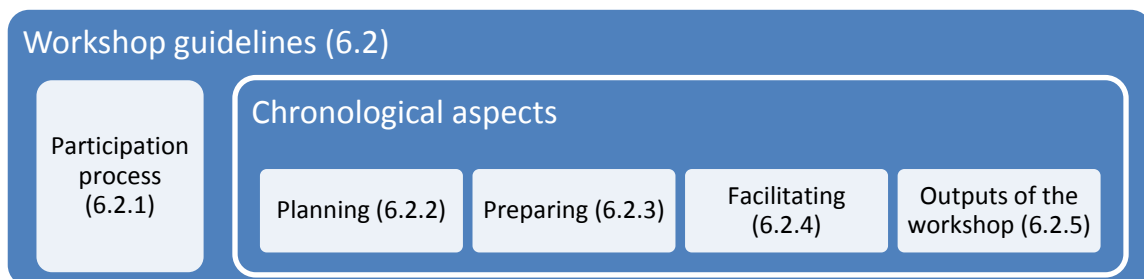


Figure 10 Structure of the guidelines section

6.2.1. Participation process

The participation process is the about making sure each participant contributes to the workshop.

Table 7 Guidelines on the participation process

	(Avison & Fitzgerald, 2006)	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Moens, et al., 2010)	(Ward & Daniel, 2006)
Guidelines on the participation process	<ul style="list-style-type: none"> •Use language of participants 	<ul style="list-style-type: none"> •All participants fully engaged and present •Contribution of each stakeholder •Encourage to ask questions and comment 	<ul style="list-style-type: none"> •First elicit everything, then resolve participants concerns •Structure workshop around agreed deliverables 	<ul style="list-style-type: none"> •Direct and early involvement of participants •Minimize the use of hierarchy in sessions •Encourage dialogue / freedom of expression 	<ul style="list-style-type: none"> •Participants should participate fully without concern for hierarchy or roles •Let anyone add, not just the one with the pen

Except for the first guideline by Gottesdiener, all of the guidelines presented by literature will be used in the workshop. The first guideline by Gottesdiener does not fit in the ES benefits management workshop as especially the synergy between the different viewpoints is essential in the ESBM method. For the workshop this means that it will use an open environment in which each participant is fully engaged.

6.2.2. Preparing the workshop

Preparing the workshop is about the actual work required for preparing the workshop.

Table 8 Guidelines on preparing the workshop

	(Avison & Fitzgerald, 2006)	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Ward & Daniel, 2006)	Experts
Guidelines for preparing the participants	<ul style="list-style-type: none"> • Intensive meeting between business and IT people so prepare specific agenda, rules and protocols • Executive sponsor should be present • No substitutes 	<ul style="list-style-type: none"> • Hand out handbook of method 	<ul style="list-style-type: none"> • Explain role ahead of time 	<ul style="list-style-type: none"> • Knowledgeable • Seniority • Time • Resources 	<ul style="list-style-type: none"> • Maturity of the participants should be sufficient for method • Use comprehensive techniques and drawings to prevent losing attention
Guidelines on the room	<ul style="list-style-type: none"> • Enough room to stand • Opportunity to create sub-sessions • Large areas of whiteboard / wall space (paper for outcomes) 		<ul style="list-style-type: none"> • Enough room to stand • Opportunity to create sub-sessions • Large areas of whiteboard / wall space (paper for outcomes) 	<ul style="list-style-type: none"> • Enough room to stand • Opportunity to create sub-sessions • Large areas of whiteboard / wall space (paper for outcomes) • Provide opportunity to visualize 	

Besides these two aspects (participants and room), the experts have provided us with a general preparation remark. We should create a script for the workshop, which is discussed with the organization to prevent surprises when the outcomes are presented (manage the expectations). This script should contain:

- Show what the activities are that will be performed during the workshop
- Show how the benefits will be determined
- What the benefits are of using this approach
- Who will achieve this benefit

The guidelines present for preparing the participants offer good insights, although not all of them are in line with the ESBM method requirements. Preventing the use of substitutes is not important for the ES benefits management workshop, as long as the knowledge required remains. The only person who cannot be replaced is the benefit owner, as he has the authority to approve the required changes by the benefits. Handing out the handbook of the ESBM method is also not in line with the ESBM method. The ESBM method should be loosely interpreted, handing it out before the workshops could decrease the flexibility of the workshop.

The guidelines for the room shall all be used in the workshop.

The main result of applying the preparation guidelines to the workshop will be the use of a large room with plenty of wall space to provide the participants with the possibility to describe thoughts and results. Furthermore, the participants will be introduced to the ESBM method, the workshop and their role in an one-on-one interview round. The interview will be conducted before the actual workshop.

6.2.3. Planning the workshop

Planning the workshop involves the actual planning of the workshop and its contents.

Table 9 Guidelines for planning the workshop

	(Avison & Fitzgerald, 2006)	(E. Gottesdiener, 2003)	(Ward & Daniel, 2006)	Experts
Planning guidelines for the workshop	<ul style="list-style-type: none"> •Length of meeting is defined upfront •No interruptions during the workshop •No dropping in or out during the workshop •Address different parts in 2 or more meetings •Work should be executed in the meantime 	<ul style="list-style-type: none"> •Assign pre-work •Plan after-work •Brainstorming and exchanging ideas up front shortens the workshop time required 	<ul style="list-style-type: none"> •Plan multiple workshops to maintain the momentum outside the workshops 	<ul style="list-style-type: none"> •Conduct multiple workshops •Conduct 1-on-1 initiating interviews •Include a break right after the brainstorming on the benefits as an opportunistic mindset will have to change to an critical mindset
Workshop content guidelines	<ul style="list-style-type: none"> •Use structured walkthroughs on results: participants review result, author is not allowed to comment 	Five stages (see 6.2.3.1): <ul style="list-style-type: none"> •Forming •Storming •Norming •Performing •Adjourning 	<ul style="list-style-type: none"> •First workshop: determine benefits and relations to goals •Second workshop choose benefits to be entered in the BC 	<ul style="list-style-type: none"> •Full workshop setup, see 6.2.3.2 •Set the mood at the start of the workshop •Spend great deal of time on brainstorming and discussion •Provide current results and review them at start of workshop 2 •Use workshop 2 to quantify the benefits further •1-on-1 interview should explain process and trigger benefit generation process •Provide clear directions and boundaries at the start (the ES project probably is not a “greenfield” project)

Before starting the analysis of the guidelines for planning the workshop we will first elaborate on two aspects from Table 9, the workshop stages from Gottesdiener (6.2.3.1) and the workshop setup by experts (6.2.3.2). These will be elaborated as they can form the structure for planning the ESBM method.

6.2.3.1. *Five stages from Gottesdiener*

Below the five stages of a workshop and their meaning according to (E. Gottesdiener, 2003) are displayed:

- Forming – involves orienting the group and explaining various options
- Storming – group members challenge each other's roles and dispute and debate the process
- Norming – involves group members understanding and supporting each other's viewpoints and dialoging about the project
- Performing – acting as a team, members quickly define and solve problems
- Adjourning – wrapping up and reaching closure

These five stages will be used to structure the procedures for the actual workshop in section 6.3.

6.2.3.2. *Potential setup of the workshop according to experts*

The setup below is provided by the experts as a possible setup for the workshop:

- 1) Identify and show the goals of the session
- 2) Diverge (*what do you want to achieve, provide participants with as much "space" as required*)
 - a) What does your world look-like with a "the ES that is the subject of the workshop"
 - b) Use a set of pictures (*use of the less analytic side of the brain, is used to determine what participants actually want, to start the conversation and to align the vision of the group*)
 - i) Choose one for current situation, describe the reasoning in keywords
 - ii) Choose one for future situation, describe the reasoning in keywords
 - iii) Consolidate to two images
 - c) Hand out the set containing the "potential benefit areas" from step 2a of the ESBM method
 - i) Each participant determines what the benefits could be
 - d) Discuss results
- 3) Converge (*Combining the results*)
 - a) Create an overview of all benefits
 - i) Could be done by using a Benefits Dependency Network
 - b) Determine intermediary benefits
 - c) Determine final goals
 - d) Check whether the results match with the scope defined at the start of the workshop.
 - e) Make the benefits more specific
 - i) Business Intelligence could be used in the meantime to help making the benefits more specific and measurable

6.2.3.3. *Analysis of the guidelines for planning the workshop*

The guidelines provided by the experts will be used directly when planning the workshop, this means that the deployment process will start with a 1-on-1 interview, followed by at least two workshops. The first workshop will contain mostly "brainstorming" and creating a draft of the final result. The second will be used to determine the required changes for the benefits and elaborate / review the results found in workshop one and finish the benefits. Between the interview and the first workshop and between both of the workshops, the participants will be requested to respectively think about potential benefits and goals and think about aspects which are left open in the benefits template. The workshops will last at most four hours.

The guidelines from Gottesdiener are derived from her experience in organizing a considerable amount of workshop and documenting the knowledge she gathered during these workshops. One of these guidelines are the stages through which a workshop should proceed. These stages are therefore suited to structure the planning of the workshop in more detail, we can even integrate the setup for the workshop provided by experts into Gottesdiener's stages. The more specific procedures for planning the workshop will be presented in section 6.3.

6.2.4. Facilitating the workshop

Facilitating the workshop involves the amount and type of facilitation used during the workshop.

Table 10 Guidelines for roles in workshops

	(E. Gottesdiener, 2003)	Other
Guidelines for workshop roles	<ul style="list-style-type: none"> • Workshop sponsor – authorizes and legitimizes the workshop, is not always present during workshop • Facilitator – plans and designs workshop and leads the process (see Table 11) • Content participant – creates workshop products • Recorder – records the groups work • Observer – Listens and learns • On-call subject matter expert – is available to answer questions 	<ul style="list-style-type: none"> • Use a scribe (Avison & Fitzgerald, 2006; Barbacci, et al., 2003) & experts

Apart from the on-call subject matter expert, all roles can and will be fulfilled in the workshop (they are already mostly present in the ESBM method). The on-call subject matter expert is not required by the ESBM method as all experts are knowledge sources required by the ESBM method. In the workshop we will combine the recorder and observer into the scribe, who will support the facilitator in running the workshop.

Table 11 Guidelines for the facilitator

	(Avison & Fitzgerald, 2006)	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Ward & Daniel, 2006)	Experts
Guidelines for the facilitator	<ul style="list-style-type: none"> • Should be independent • Leads and manages • Know tasks participants undertake • Responsible for process and outcomes • Controls: objectives, agenda, process and discussion • Know the psychology of group dynamics 	<ul style="list-style-type: none"> • Able to cut discussions short in the interest of time / outcomes 	<ul style="list-style-type: none"> • Designs workshop • Plans workshop • Recommends deliverables • Leads process 	<ul style="list-style-type: none"> • Familiar with business area • Not directly involved • Skills and experience in facilitation • Expert knowledge of tools and techniques in method 	<ul style="list-style-type: none"> • Question the reasoning behind benefits (prevents a "soft" arguments base) • Determine when benefits are properly defined (prevents "over-specifying") • Act as a mediator • Do as little as possible

Even though the different guidelines for the facilitator are on different abstraction levels, all can be integrated in the workshop and should be adhered to by the facilitator. The independent facilitator was not unexpected, it is however remarkable that nearly all sources agree on this. The author of the research will act as the independent facilitator. During the workshop he will manage the discussions

and process. When required, the facilitator will also critically review the results during the workshop. The facilitator should however not act as an expert, the participants should provide the relevant knowledge.

6.2.5. Outputs of the workshop

The outputs of the workshop consist of the (intermediate) products delivered by the workshop.

Table 12 Guidelines for workshop outputs

	(Avison & Fitzgerald, 2006)	(E. Gottesdiener, 2003)	(Ward & Daniel, 2006)	Experts
Guidelines for the output of the workshop	<ul style="list-style-type: none"> •Use proto-types 	<ul style="list-style-type: none"> •Work hands-on with a variety of tools 	<ul style="list-style-type: none"> •Use sticky notes in the beginning, it can change regularly •Encourage writing as explicit as possible •Emphasize on high quality outputs that can be refined and finalized •Record changes to the benefits 	<ul style="list-style-type: none"> •Visualize the results •Use large sheets of paper with sticky notes and markers •Premade benefits templates to be filled in

Except for the prototypes, each output guideline will be directly used. The final product will not (and cannot) be modeled during the workshop, so using prototypes becomes difficult. We can however redefine the prototype to a draft version of the workshop deliverables, which would align this guideline with the experts findings (visualize and premade templates). For the workshop this means that the participants will create a draft of the result early on in the process to help visualizing the result. Furthermore benefit templates will be used to place the input (sticky notes) on.

6.3. Planning the procedures within the workshop stages

The guidelines show us what to think of when designing the workshop for the ESBM method. It does not tell us what activities we should perform in the workshop, we need to go one level deeper into planning the workshop. In this section we will show an overview of procedures found in literature and practice. The procedures found will be used to plan the contents of the workshop. We will use the five stages from Gottesdiener (forming, storming, norming, performing, adjourning) to structure the procedures, as can be seen in Figure 11.

Procedures within the planning guidelines (6.3)

Forming (6.3.1)

Storming (6.3.2)

Norming (6.3.3)

Performing (6.3.4)

Adjourning (6.3.5)

Figure 11 Structure of the procedures section

The experts suggested using a workshop slide deck for IT-strategy named “Transforum” as inspiration for the workshop. For the techniques from the experts this means that there is a combination of what they mentioned during the interviews and the techniques used in the “Transforum” slide deck.

6.3.1. Workshop stage forming

Forming involves orienting the group and explaining various options.

Table 13 Procedures in the forming stage

	(Avison & Fitzgerald, 2006)	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	Experts
Procedures in the forming stage	Describe role of participant: <ul style="list-style-type: none"> • Their viewpoint • Key tasks with respect to the project • Critical success factors for the project • Major problems facing the project 	<ul style="list-style-type: none"> • Presentation of method • Introduction of facilitators • Introduction of participant • Business / mission presentation by stakeholder for high level targets / constraints 	<ul style="list-style-type: none"> • Kick off workshop with sponsor • Focus on ground rules and deliverables • Model desired behavior • Provide direction for group activities • Simple tasks for practitioner • Use ice-breakers • Awareness mini-training 	<ul style="list-style-type: none"> • Identify and show the goals of the sessions • Motivation of the workshop setup • Determine issues which should be solved by the ES

The description of the role of the participant (Avison & Fitzgerald, 2006) seems to explicit to use in the ES benefit management method, it would probably require too much for the participants to provide this type of information. The procedures mentioned by the other sources seem to be coherent and will be integrated to plan the forming stage of the workshop.

The forming stage of the workshop will consist of an introduction to the workshop. In the introduction the goals of the workshop, the workshop setup and the participants will be introduced. This will result in an efficient start of the workshop, by aligning the participant's thoughts.

6.3.2. Workshop stage storming

Storming involves group members challenging each other's roles and dispute and debate the process.

Table 14 Procedures in the storming stage

	(Avison & Fitzgerald, 2006)	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Hannola, et al., 2008)	(Moens, et al., 2010)	Experts
Procedures in the storming stage	<ul style="list-style-type: none"> • Brainstorming • Cooling break at the end • Then consolidate 	<ul style="list-style-type: none"> • Plan for satisfying key business / mission requirement • Identification of the drivers to reach those requirements • 15 min break to consolidate • Review findings with participants • Scenario brainstorming 	<ul style="list-style-type: none"> • Stay calm and neutral • Capture issues and concerns • Apply and enforce the rules which were agreed • Acknowledge and address conflict • Invite input and feedback • Mirror or paraphrase disputes • Provide observations of the storming to the group 	<ul style="list-style-type: none"> • Ask participants to provide features and services based on their viewpoints 	<ul style="list-style-type: none"> • Scenario development by strategic conversations in simulated setting • Visioning exercise (could be brainstorm) • Confrontation of perspectives 	<ul style="list-style-type: none"> • Use set of pictures to start conversation • Hand out "potential benefit areas"

The sources shown above provide different types of procedures (e.g. on the process, on the activity), which makes it difficult to compare the different sources. The procedures from Gottesdiener focus on the actual facilitation of the storming process and is therefore on different level than the other sources. This leaves us five sources from which the procedures are roughly in line with each other. Except for the scenario forming (Moens) / brainstorming (Avison & Fitzgerald), all procedures can be consolidated into one consistent whole of four procedures. It starts with the picture set to find the goals and viewpoints (1), then a brainstorm on the benefits (assisted with the “potential benefit areas”)(2), followed by a break (3) and finally the consolidation of the benefits found (4).

The storming stage will identify the benefits for the ES implementation, by using a 4-step brainstorm. An online collaboration tools will be used to guide the brainstorming process. The result will be prioritized and selected in the norming stage.

6.3.3. Workshop stage norming

Norming involves group members understanding and supporting each other’s viewpoints and dialoging about the project

Table 15 Procedures in the norming stage

	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Hannola, et al., 2008)	(Kettinger, Teng, & Guha, 1997)	(Moens, et al., 2010)	Experts
Procedures in the norming stage	<ul style="list-style-type: none"> •Scenario consolidation, let stakeholders decide •Scenario prioritization •Voting: each participant gets votes equal to 30% of objects, 2 rounds 	<ul style="list-style-type: none"> •Back off on structure and explicit direction •Allow adjustments to the process •Ensure even distribution of work, contribution and discussion •Actively seek feedback on the process •Give participants more complex tasks •Reinforce positive behavior 	<ul style="list-style-type: none"> •Place main requirements on the wall to help structuring •Discuss each requirements found •Group decides priority of the requirement •Options to help prioritizing: irrelevant, later, low, high 	<ul style="list-style-type: none"> •Use a process / Critical Success Factor matrix to review if CSFs are reached by the processes 	<ul style="list-style-type: none"> •Define leverage areas for change •Ranking of the leverages (joint priority setting) 	<ul style="list-style-type: none"> •Prioritize the benefits •Choose the five most important for the business case

Again, Gottesdiener is on the facilitation during the norming stage and can be used fully. The main procedures from the other sources are prioritizing the benefits found and making a selection which should be elaborated (eventually by voting). The critical success factor matrix (Kettinger, et al., 1997) can be used to map the goals to the benefits (after the benefits have been found). The only procedure that cannot be used is defining the leverage areas for change (Moens, et al., 2010), as this is not the goal of the ESBM method.

The norming stage will consist of prioritizing the benefits found and selecting the benefits to be elaborated during the workshops. An online collaboration tool will be used to prioritize and select the benefits. The result will be a limited set of benefits of the project which will be elaborated during the remainder of the workshops.

6.3.4. Workshop stage performing

Performing involves acting as a team in which members quickly define and solve problems.

Table 16 Procedures in the performing stage

	(Barbacci, et al., 2003)	(E. Gottesdiener, 2003)	(Moens, et al., 2010)	Experts
Procedures in the performing stage	<ul style="list-style-type: none"> • Refine the scenarios and objects 	<ul style="list-style-type: none"> • Provide all information requested • Inject celebration frequently • Rotate roles in small group activities • Allow members to volunteer for tasks and follow-up • Challenge the group to figure things out 	<ul style="list-style-type: none"> • Extent leverages into project plans • Use small teams • Create prototypes 	<ul style="list-style-type: none"> • Include additional calculations, so after entering contents it could automatically calculate • Determine the conditions for executing the project with the selected benefits • Conduct sensitivity analysis on the outcomes • Use “carrousel”, in small groups each benefit is treated shortly, then proceed to the next benefit • “Do wells”: what should you do to make the project successful. • “Reverse engineering”: what can you do to stop achieving the benefits

Gottesdiener will be used to facilitate the performing stage. When we redefine the prototype to workshop deliverables, we can use all but one of the procedures mentioned in the overview. The additional calculations do not match with the goals of the ESBM method, the ESBM method is only used to find and manage benefits.

The performing stage will consist of entering the benefit aspects into the benefit template (see Figure 4 for the template) by using the “carrousel” technique. Furthermore it will consist of selecting the benefits to be used in the business case, by determining the dependencies between the benefits. This process will be divided over the two workshops, where workshop 1 will create a draft (without the required changes) and workshop 2 will finish the draft version to the final benefit. The result will be the benefits to be entered in the ES business case.

6.3.5. Workshop stage adjourning

Adjourning involves wrapping up the session and reaching closure.

Table 17 Procedures in the adjourning stage

	(E. Gottesdiener, 2003)	(Moens, et al., 2010)	Experts
Procedures in the adjourning stage	<ul style="list-style-type: none"> • Conduct an explicit workshop debrief • Allow sufficient time to adjourn • Promote appreciative inquiry, allowing members to review effective behaviors and actions • Perform team review 	<ul style="list-style-type: none"> • Review the workshop and process • Discuss future steps 	<ul style="list-style-type: none"> • Use Benefit Dependency Network

Except for the benefits dependency network (BDN), all procedures will be used in the workshop. When constructing the ES benefit management method, business experts found the BDN too difficult to use in business case projects (Oude Maatman, 2010), it will therefore not be used in the ESBM method.

The adjourning stage will consist of an evaluation of the results and the process/workshops by a discussion with the participants and a questionnaire to be completed by the participants. The result will be a review of the results and a qualitative evaluation of the ESBM method.

6.4. Conclusion: the ES benefits management workshop

The previous sections have been used to construct the complete ES benefits management workshop. The ES benefits management deployment process is too sizeable to show in this document, a short overview of the deployment process of the ESBM method is therefore provided in Figure 12.

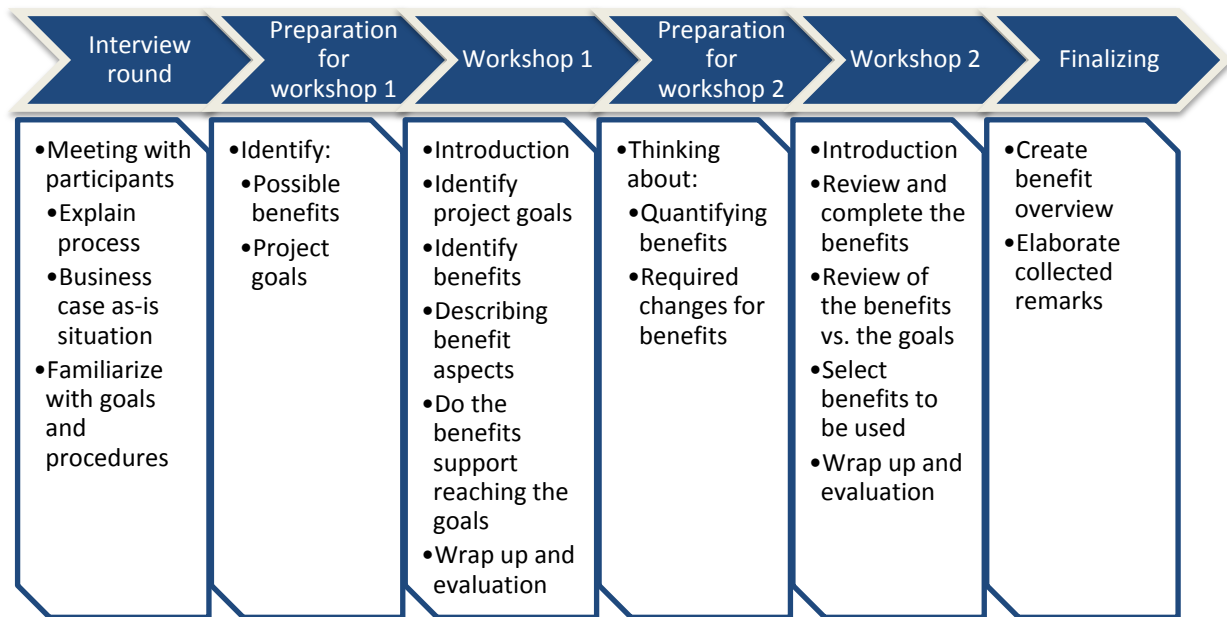


Figure 12 Overview of the ES benefits management deployment process

This chapter has used workshops presented in literature and business experts to design the contents of the deployment process in Figure 12. We observe that the contribution of business experts to the design of the deployment process is more substantial than the contribution of literature. Literature only provides high level descriptions of workshop designs, which is difficult to use as input for designing the deployment process for the ESBM. Only Gottesdiener was able to provide specific input for the deployment process design, even though her input contributed more to managing the workshop than to designing it. Despite the input provided by business experts, the contents of the deployment process are mostly generated by the ESBM method itself. Its four steps are the main activities of the deployment process, and the description of the four step provided sufficient details to make the activities suitable for deployment. Herewith, the ESBM method proved to provide the most valuable input for the deployment process. To be able to provide this input, the ESBM method should already contain sufficient details to design the deployment process. The fact that it is capable to do so, shows that the ESBM method already was highly applicable and usable for adopting organizations.

7. Validating the ES benefits management method

Everything single aspect in this research has been created to validate the ESBM method and its deployment process. Validating the ESBM method will show whether the ESBM method creates more specific and feasible benefits, while remaining applicable for the adopting organizations. In chapter 4, it was explained why Technical Action Research was chosen as research method to conduct/ validate this research. The ESBM method will be validated by looking at three aspects: the cases in which the ESBM method has been deployed (1), the outcome of deploying the ESBM method in three cases (2) and the results of an evaluation of deploying the ESBM method by the participants(3). Each of these items will be described in its own section below.

In section 7.1 the cases at which the ESBM method was deployed will be shown. For each of the cases, the case itself, the process of deploying the ESBM method and the outcome will be described. This will serve as the base for the cross case evaluation of the outcomes in section 7.2. The outcome of the deploying the ESBM method in three cases represents one dimension of the results, i.e. it does not cover the opinion of the participants on using the ESBM method. Therefore, section 7.3 will discuss the participant's assessment of deploying the ESBM method. The findings from sections 7.2 and 7.3 server as input for potential improvements on the ESBM method. These recommended improvements will be described in section 7.4. Section 7.5 will then provide a summary of the results produced by deploying the ESBM method. The structure of this chapter can also be seen in Figure 13.

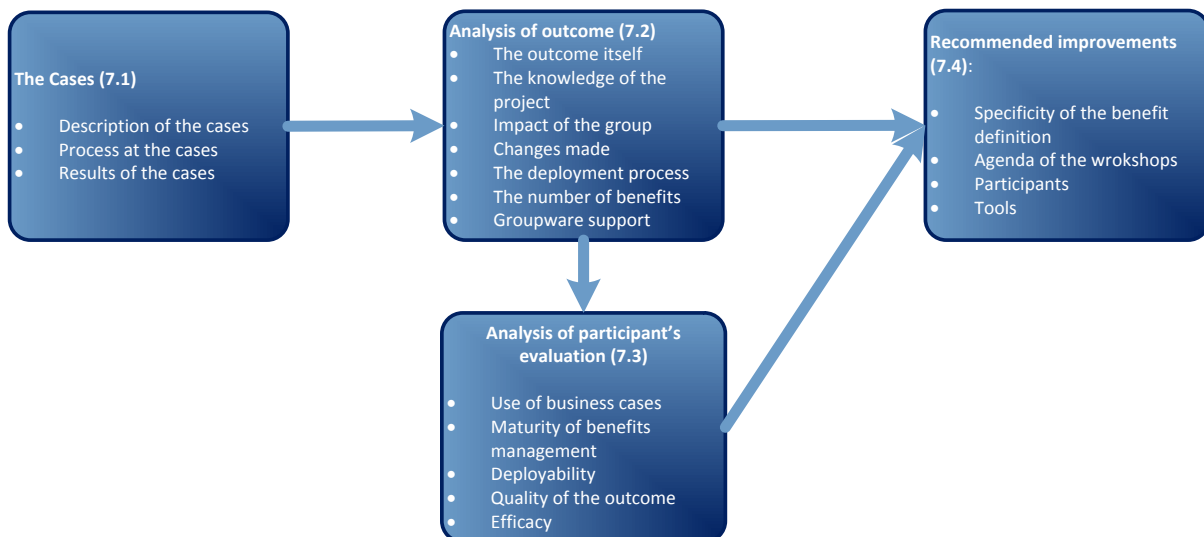


Figure 13 Structure of chapter 7

7.1. Deploying the ESBM method

There are three projects in which the ESBM method is validated, each treated in its own section: Company A (7.1.1), Company B (7.1.2) and Company C (7.1.3). For each of the projects a description will be given according to step 4 of Wieringa's engineering cycle (see also Table 5, page 18):

1. What goals should be achieved by implementing the ES and what is the reason for using the ESBM method?
2. Will the ESBM method result in additional benefits that are more specific and more feasible?
3. What changes are required to make the deployment process suitable for the project?
4. What is the outcome of applying the ESBM method for the organization?
5. Were the goals stated by the adopting organization reached by deploying the ESBM method?

For each case the first two questions will be treated in the description of the project context section, the third will be treated in the method deployment process section and the latter two will be treated in the process- and outcome section of the project. No valid measures are present to define the quality of the benefits specified in the three cases, which makes providing the actual outcome fruitless. Instead, the description of the outcome will be based on four dimensions:

- the case owner's opinion on the result
- the quantitative results of deploying the ESBM method in the project
- the progress made in workshop 2 (comparing workshop 1's benefits outcome with workshop 2's benefits outcome, based on information entered in the benefits template)
- The facilitator's opinion on the result, i.e. the qualitative results of deploying the ESBM method in the project (discussing the outcome of the cases in relation to each other amongst both facilitators)

7.1.1. Deploying the ESBM method at a global provider of audit and consultancy services

7.1.1.1. Description of the project context at Company A

Company A is a large audit and consulting firm. Company A the Netherlands is planning to implement a SAP system to comply with Company A Europe demands. While implementing this system, Company A's Dutch consulting business unit (Company A in the remainder of the section), is free to choose their own planning module. The goal of the project is to reduce difficulties in planning projects (involving multiple BUs) and to increase efficiency of the planning. Company A uses the ESBM method to combine knowledge required to start (and manage) and to create a more specific view of the outcome of the project. Currently, only the high level benefits of the project are known, without knowledge of how to achieve the benefits. This matches the goal of the ESBM method, so using the ESBM method should help them to make the benefits more specific and feasible. A short (numerical) description of deploying the ESBM method at Company A is shown in Table 19.

7.1.1.2. Description of the method deployment process at Company A

Workshop 1 at Company A was the first ESBM method workshop 1 to be conducted (see Figure 14 on page 55 for an illustration of the deployment processes in the three cases). The original planning for the workshop was used (see Figure 12), the changes to the deployment process after starting workshop 1 can be found in Table 18. Working with the photos to identify the project goals went smoothly and resulted in a clear list of goals for the project. While discussing the goals with the

participants, it became clear that participants started the workshop with a clear interpretation and understanding. When asking questions on the goals, the participants were able to respond directly, without interpretation differences between the participants. After resolving a few startup issues with the group decision support system (Spilter), the participants used the tool for the brainstorm on potential benefits of the project. The brainstorming went smoothly and resulted in 38 benefits in total. After categorizing the benefits using two dimensions (size and importance) the group used Spilter to prioritize all benefits in the “high size, high importance” category. Spilter proved to be a valuable tool in prioritizing, without disagreement and within 10 minutes the top five benefits (highest priority) were selected to enter in the benefits template. Entering the different aspects of the benefits template in groups of two person engaged a large amount of discussion and input on the benefits. These discussions were important for the outcome, so the facilitator decided to postpone the matching of the benefits to the goals to the 2nd workshop to prevent a time shortage. Even without connecting the benefits to the goals, the 1st workshop was too short to grant the participants the opportunity to deeply engage on a benefit. When discussing the worked out benefits with the participants, the facilitators noted that participants were having a hard time understanding the “measurement of effect” aspect: measurement techniques were placed in the quantifiable section, instead of in the measurable section.

Workshop 2 at Company A was the second ESBM method workshop 2 to be conducted, which meant it could be adapted to the findings and outcome from the 2nd workshop at Company C. First, the planning was made more flexible to spend as much time as required to

Table 18 Changes made to the deployment process at Company A

Change	Reason	WS
Postponing matching benefits with goals to WS 2	Shortage of time in WS 1	1, 2
Planning made flexible	Dedicate time to improving and completing benefits	2
Decrease priority of matching benefits with goals	Less added value than completing benefits	2
Provide manual and benefit example to participants	Increase knowledge of method	2
Review of the benefit definition before completing the benefit	Improves quality of the benefits	2

improve and complete the benefits. Thus connecting the benefits with the goals and determining interdependence between the benefits was given a lower priority. Next to that, the participants were provided with a manual on how to use the method and a completely filled out benefit template using an example of a benefit, both were provided to assist in finding information and placing it in the corresponding aspect. While improving and finishing the benefits, the participants found that the original benefit definitions were not always correct or lacked specificity. When improving / revising the benefit definition they were able to enter more aspects of the benefit. Together with the group, the fully specified benefits were connected to the goals. In the resulting picture there were no benefits without connections and no goals without connections. Lastly the group determined the interdependencies between the benefits. After a slow start, the group identified several positive interdependencies and no negative interdependencies. Based on the interdependencies the group then reviewed the “effect” aspect of each of the connected benefits to determine when a specific result could be achieved. This resulted in several changes of benefit effects to another benefit and removal of duplicate benefit effects. Therewith the interdependency activity provided an unexpected but valuable source to improve the outcome.

7.1.1.3. Outcome of deploying the ESBM method at Company A

An overview of the statistics concerning the outcome can be seen in Table 19. After workshop 2 the outcome was discussed with the case owner. Looking at the overall outcome, the case owner especially values the increased insights in the project and combining (and bonding) several stakeholders in the project. The five benefits hatching out of the second workshop will help him managing the project, while aiming at the desired project result. Asked about the quality of the outcome, the case owner indicated that the quality of the outcome after workshop 2 is good. However after workshop 1 the outcome was too “high level”, he found it difficult to see where it was going. The progress made during workshop 2 (see Table 21) endorses the fact that the benefit quality and specificity improved during workshop 2. The case owner indicated that the process was smooth and successful: a high amount of energy was created and each participant was able to contribute to the discussions, thereby increasing the quality of the result.

From the facilitator’s point of view, the outcome of the Company A planning project is of good quality. The aspects entered in the benefit templates are well defined and to the point. When continuing the project the benefits are defined on a level that helps to pinpoint what activities should be performed to reach one of the specified outcome measures. The weakest point of the benefits identified at Company A is the “effect”, the actual result of the benefits. Even though some measurements are introduced, future work is required to define the result in numbers or euros, as currently only one benefit is expressed in euros and one in numbers. The process to arrive at the outcome was smooth and fast, where the Spilter tool helped to ease the practical side of the workshop activities.

Table 19 Quantitative outcome in the Company A case

Statistic	Result
Participants (business / IT)	6 (5/1: the project manager performed an IT role as well)
Participants present during complete process	6
Viewpoints occupied	6/6
# Identified goals	5
# identified benefits	38
# fully specified benefits	5
# benefits expressed in €	1
# benefits expressed in numbers	1
Time between workshops	7 days
Duration of workshop 1	3 hours
Duration of workshop 2	3 hours
Use of Spilter	Yes

Table 20 Qualitative outcome in the Company A case

Qualitative outcome in the Company A case
More specific benefits
More feasible benefits
Increased manageability of the benefits
Additional insight in the project
Bonding stakeholders
High quality of benefits

Table 21 Differences between 1st and 2nd workshop at Company A

Changes	#
Additions (of benefit information)	50
Improvements (replacing/improving benefit information)	13
Removals (of benefit information)	7

7.1.2. Deploying the ESBM method at a global supplier of office supplies

7.1.2.1. Description of the project context at Company B

Company B has performed SAP roll outs in several European countries. For the next roll out in country X Company B wants to know whether a new roll out is viable and what the benefits are of performing the next roll out. The benefits will also be used in a business case to persuade local

management to cooperate in the project. The goal of the project is to standardize processes around Europe (and especially in country X) and to make their current business processes more efficient. For the new SAP roll out the benefits are (partially) known by Company B, however for country X the benefits are still unclear. Using the ESBM method should help them building the business case for the national project.

7.1.2.2. Description of the method deployment process at Company B

Workshop 1 at Company B was the second ESBM method workshop 1 to be conducted (see Figure 14 on page 55 for an illustration of the deployment processes in the three cases). The original planning for the workshop was used (see Figure 12), the changes made to the deployment process after starting workshop 1 can be found in Table 22. Working with the photos to identify the project goals resulted in a healthy discussion and sound goals. However, discussing the outcome

Table 22 Changes made to the deployment process at Company B

Change	Reason	WS
Postponing matching benefits with goals to WS 2	Shortage of time in WS 1	1, 2
Addition of intermediary benefit discussion	Improve effectiveness of preparation for WS 2	-
Extend duration of workshop to 4,5h	Allow sufficient time to complete benefits	2
Planning made flexible	Dedicate time to improving and completing benefits	2
Decrease priority of matching benefits with goals	Less added value than completing benefits	2
Change procedure of matching benefits with goals	Decrease required time	2
Provide manual and benefit example to participants	Increase knowledge of method	2
Review of the benefit definition before completing the benefit	Improves quality of the benefits	2
Increase priority of interdependence between benefits	Provides high added value to quality of outcome	2
Change procedure of interdependence between benefits	Increase quality of outcome	2

with the participants showed that the goals of the project were not always clear. Some were on European level, while others were on national level, which showed that project specifics were not well known. Spilter was used to guide the brainstorm on identifying the benefits. The brainstorm got off with a slow start but performed very well, 52 benefits were identified. Categorizing the benefits on the dimensions went by using Spilter, proved to be anything but a problem. Reviewing all results in the “high size, high importance” category engaged a discussion on how the benefits were (and should be) defined. The group decided to group several benefits before entering the prioritization. The prioritization was clear on the first four benefits, however three benefits were ranked fifth. After renaming and regrouping, benefit five could be selected. During the break a new participant (expert in Sales) enters the workshop, and adds a sixth benefit after reviewing the results (sales was missing and is important for the business case). When entering information in the aspects of the benefit template the participants find it difficult to enter specific information, while the benefit is not defined specifically enough (difficulties in type of change, measurement of effect, benefit owner). During this phase the facilitators indicate that time is scarce, so it is decided to drop matching benefits with goals. Even without this step the time available for the workshop was still short. At the end of the workshop the group notices that they lack certain knowledge to complete the benefits, so additional participants are invited for the second workshop. After the workshop Company B assigns a

responsible participant to each of the benefits, to improve it and find the information required to finish it.

Between both workshops the case owner requests to review the specific benefits, and their current shortcomings, with the assigned participant(s). For each of the benefits the facilitator discusses the current findings, to do's and, if required, the ESBM method. This intermediary discussion of the result was added (new) to the deployment process. The discussion held with the participants were structured discussions: elaborate the method explanation, discuss opportunities, review the benefits and wrap up the discussion.

Workshop 2 at Company B was the third ESBM method workshop 2 to be conducted. The planning of the workshop was changed to improve the quality of the outcome. The length of the workshop was increased by 1,5 hours to allow more time to work on the benefit. Based on the outcome at Company A and Company C, the time for "connecting goals and benefits" was reduced and the procedure changed. Instead of discussing the connections between benefits and goals with the group, the facilitators review the drawings made by the participants to see whether each goal is reached and each benefit is connected to a goal. The time saved is used to extend the "interdependence between the benefits" discussion.

At the start of workshop 2 the case owner requested the participants to share the insights on the benefits they prepared. This ignited a strong and valuable discussion about each of the benefits and the scope of the project, it also created a common understanding of the benefits amongst the participants. The required time for the discussion was subtracted from the time available for completing the benefits. This change in planning did not result in a decrease of quality of the outcome. The participants then started completing the benefits in couples, rotating to the next benefit after 15 minutes. It took the participants 2 rounds and a break to complete the benefits. Based on the results in the benefit templates, the participants engaged a new discussion. The discussion was centered around two topics: planning the project and the immediacy of reaching the benefit (part of the scope). Through the method the participants came together and were encouraged to actually think about the issues for planning the project and even though it does not directly result in input for the method, it provides them great insights and understanding of the project. On the other hand, the second topic was directly related to the ESBM method. The participants found that not each of the benefits would be reached by this project (immediately), but that there were also enabling benefits. These are benefits that either directly enable starting a subsequent project ("hard enabler") or help reaching the goal of another project ("soft enabler"). Assigning benefits an "enabling" status helped the participants to clarify the scope of the project. For the hard benefits, the participants provided high level guestimates on the results. Matching the benefits with the goals, showed that one goal had to be reformulated as it was a precondition of the project rather than a goal. Determining the interdependence between the benefits got off with a slow start, but resulted in transferring one "measurement of effect" from the originating benefit to the receiving benefit.

7.1.2.3. Outcome of deploying the ESBM method at Company B

The quantitative outcomes of deploying the ESBM method at Company B can be found in Table 23. When discussing the outcome from which the statistics originated, the case owner indicated a significant difference in the quality of the outcome after the first and after the second workshop. He indicated that workshop 1 generated a good amount of benefits and a healthy discussion, but the benefits were too high level to actually use in the business case for the national project. The additional round of discussions between the workshops have improved the quality of the preparation for workshop 2, more information was available and aspects could be made more specific. Preparing workshop 2 by using the additional round showed that the participants were able to acquire more detailed information and insights in the project. During workshop 2 this could be noted by the high amount of in-depth discussion, in which the ESBM method ignited the discussions. Each of these discussions helped the participants to gain more insight in the project. Next to the discussions, the participant greatly improved the results, as can be seen by the high number of changes in Table 25. The case owner indicated he was happy with the quality of the outcome, even though the benefits were not completely finished, it showed him how to proceed with the business cases. Furthermore, he valued the various healthy discussions between the participants, it helped him (and the participants) to better define the scope of the project and generate additional insights in the project. Lastly the case owner valued the enabling benefits, as it helped creating the (non-financial) business case for higher management.

From a facilitator's point of view the result at Company B was at moderate quality after workshop 1 and of good quality after workshop 2. The preparation for workshop 2 have proven to be a valuable addition to the deployment process, quality of the outcome increased substantially. The intermediate discussions also showed the commitment of Company B to the project, but for this research more importantly, to the ESBM method. This preparation increased the quality of the discussions during the workshop, in return, this greatly improved the quality of the resulting benefits.

Table 23 Quantitative outcome in the Company B case

Statistic	Result
Participants (business / IT)	9 (7/2)
Participants present during complete process	7
Viewpoints occupied	6/6
# Identified goals	3
# identified benefits	52
# fully specified benefits	7 (6 after WS 1, 1 removed before WS 2, 2 additional after WS 2)
# benefits expressed in €	1
# benefits expressed in numbers	3
Time between workshops	34 days
Duration of workshop 1	3 hours
Duration of workshop 2	4,5 hours
Use of Spilter	Yes

Table 24 Qualitative outcome in the Company B case

Qualitative outcome in the Company B case
More specific benefits
More feasible benefits
Additional insight in the project
Better definition of scope of the project
Increased commitment of participants
Moderately high quality of benefits
Benefits divided in immediate and enabling benefits

Table 25 Differences between 1st and 2nd workshop at Company B

Changes	#
Additions (of benefit information)	98
Improvements (replacing/improving benefit information)	19
Removals (of benefit information)	12

The benefits itself could be made more specific than they current are, even though this is mainly caused by the high amount of enabling benefits. The process during the workshops went smooth, even though the participants were hard to keep on track during workshop 2. The process at Company B showed the commitment to the project and a bursting energy to execute the project and use the ESBM method.

7.1.3. Deploying the ESBM method at a global provider of power products, systems and services

7.1.3.1. Description of the project context at Company C

Company C currently has three different SAP entities (v4.7) throughout the world in more than 25 locations. Company C would like to consolidate the different SAP entities to one central SAP entity. The consolidated SAP entity should run on SAP v6. The goal of the project (besides one global and upgraded SAP) is to harmonize processes throughout the world. For the project, Company C, has currently identified three main benefits: one source of data, efficiency improvement in business processes and an increased technical flexibility of the system. Company C would like to get a better view on the potentials the project offers, additionally Company C wants to increase stakeholder commitment. Previous application of (parts of) the ESBM method showed that it is able to create commitment to the business case/project (Divendal, 2010) and the goal of the ESBM method is to find additional, specific and feasible benefits, the ESBM method is therefore suited well for the project at Company C.

7.1.3.2. Description of the method deployment process at Company C

The number of participants for the workshop was over 20 (see also Table 27), which meant that the deployment process had to be changed before starting it. Increasing the number of participants causes several challenges for the workshop: managing the process in Spilter becomes a time consuming process, participants can more easily stay out of discussions, interviewing each participant before the workshops requires a large amount of time and leading discussions becomes more difficult. To conquer these challenges several changes were made to the deployment process:

Table 26 Changes made to the deployment process at Company C

Change	Reason	WS
Interviews only with viewpoint representatives	Group too large, high time consumption	-
Addition of ESBM method introduction	ESBM method had not been explained to each participant	1
No use of Spilter	Difficult to keep participants involved, time consuming administration	1
Scheduled matching benefits with goals to WS 2	Shortage of time in WS 1	1, 2
Completing benefits: 1 group responsible for 1 benefit	Increase in depth discussion and quality of benefit	2
Review of the benefit definition before completing the benefit	Improves quality of the benefits	2
Planning made flexible	Dedicate time to improving and completing benefits	2
Decrease priority of matching benefits with goals	Less added value than completing benefits	2
Provide manual and benefit example to participants	Increase knowledge of method	2

- Interview round is executed with only the participants who represent the viewpoints in the ESBM method
- ESBM method and workshop introduction added to workshop 1
- Groupware (Spilter) is not used
 - Brainstorming on the benefits is performed in groups
 - The groups categorize the benefits from other groups to maintain the synergy
 - Consolidation of brainstorm and categorization results will be executed by the groups with only a limited interference by the facilitators

Workshop 1 at Company C was the third ESBM method workshop 1 to be conducted (see Figure 14 on page 55 for an illustration of the deployment processes in the three cases). Based on the previous two workshops the facilitators decided to include “do benefits match goals” only in the program when sufficient time was present. This, and all other changes made to the deployment process at Company C can be found in Table 26.

Determining the goals for the project got off with a quick start when discussing the pictures, however when discussing the resulting goals with group the process nearly came to a stop after two goals were noted on the whiteboard. It took the group a long time to review the result and consider whether these goals were the only ones to be reached by the project. After two prudent additions the group suddenly started to enter in fierce discussions from which in total six goals were defined. However, looking at the goals from an outsider’s perspective the goals were hardly meant to be reached by this project, most goals were on a higher level. The goals lacking specificity, showed that the group was facing difficulties too determine what the project was actually about and that little knowledge was present on the project. Brainstorming on identifying the benefits of the project went smooth and fast and resulted in 38 identified benefits to be categorized. However, prioritizing the benefits was troubling for the participants. To arrive at a maximum of five benefits the group consolidated several benefit to create one exceeding benefit. The resulting benefits were too broad to use in the benefit templates, as the participants soon found out. Each of the groups (five groups, four persons per group) was having difficulties to “answer” the other aspects of the benefits, mainly due to the non-specific definition of the benefit. When reviewing the outcome with the participants, relatively few aspects were “answered” and if answered they were on a high abstraction level. “Do benefits match goals” was not performed in workshop 1, as the difficulties with the benefits required a lot of time.

In comparison with the other cases, the outcome of workshop 1 was less specific and more to-do’s were present after workshop 1. To increase the potential outcome from workshop 2, the facilitators decided to change the setup of workshop 2. As much time as possible was directed to completing the benefits, which meant that determining the benefits would only be executed if conflicting benefits were present. The setup of completing the benefits was changed to increase the time for in depth discussion of the benefits. Originally the groups would rotate on the five selected benefits, for Company C this setup for workshop 2 was changed to one group being responsible for one benefit. After workshop 1, the definitions of the benefits were too high level, so the groups were also asked to spend the first five to ten minutes to improve the definition of the benefit, i.e. to make the benefit more specific. These changes would increase the available time for participants to really focus on the benefit and improve it. To maintain the synergy between the groups, each group had to present their benefit to the other groups, where the listening groups were asked to provide feedback.

Workshop 2 at Company C was the first ESBM method workshop 2 to be conducted. The agenda was changed to create as much opportunity to improve the benefits as possible (as discussed in the previous paragraph). Reviewing the benefit definition resulted in all benefits to be redefined and made more specific. The aspects of the redefined benefits were easier for the group to “answer”, the group generated a large amount of new and improved output. This shows the change in the setup for Company C to be effective. The group process at Company C to arrive at the improved benefit was not always perfect, most of the groups identified a lack of business knowledge present in their group to be able to fully describe all aspects of the benefit.

Presenting the completed benefits to the other groups resulted in a healthy discussion on the benefit aspects, which helped to improve the benefits further. In four groups, the benefits were then connected to the goals. The consolidated results showed that each benefit was connected to several other goals, and likewise, which showed that the project would be able to achieve each goal. Looking at the benefits, the group indicated that no conflicting benefits were present.

7.1.3.3. Outcome of deploying the ESBM method at Company C

The outcome of deploying the ESBM method at company C differ greatly between the first and the second workshop, as Table 29 shows. Discussing the outcome (see Table 27 for the quantitative and Table 28 for the qualitative outcomes of deploying the ESBM method at Company C) with the case owner resulted in the same main finding. After workshop 1, he enjoyed and valued the process, but the outcome was too high-level for his liking. The outcome from workshop 2 increased his value of the process, but more importantly, it also provided input which could be used for the remainder of the project. The difference between the outcome is even more staggering when looking at the preparation time between the workshops, only one day was available to prepare workshop 2. Considering the end result, the case owner values the benefits as more specific and feasible than the high level benefits used at the start, additionally they helped him to create new insights in the project. Next to the benefits outcome of deploying the ESBM method, the case owner greatly valued the increased project commitment of the participants.

Table 27 Quantitative outcome in the Company C case

Statistic	Result
Participants (business / IT)	21 (5/16)
Participants present during complete process	3
Viewpoints occupied	6/6
# Identified goals	6
# identified benefits	38
# fully specified benefits	5
# benefits expressed in €	1
# benefits expressed in numbers	0
Time between workshops	1 days
Duration of workshop 1	3,5 hours
Duration of workshop 2	3 hours
Use of Spilter	No

Table 28 Qualitative outcome in the Company C case

Qualitative outcome in the Company C case
More specific benefits
More feasible benefits
Additional input for the project
Increased commitment of participants
Moderate quality of benefits
Ignited constructive discussions on project scope

Table 29 Differences between 1st and 2nd workshop at Company C

Changes	#
Additions (of benefit information)	78
Improvements (replacing/improving benefit information)	17
Removals (of benefit information)	29

From the facilitators point of view the outcome after workshop 1 was of low quality, especially considering both of the other cases. The outcome was too high level to actually work with in the ESBM, fortunately the ESBM method showed the lack of specificity by forcing the participants to redefine the benefit. The outcome after workshop 2 has improved greatly, but still is of moderate quality. The benefits serve more as a starting point for building the benefits side of the business case, than the benefits side itself. A lot of work is needed to process the input in the templates to the actual specific content which could be entered directly in the business case.

7.2. Cross case analysis of deploying the ESBM method

In this section the analysis of deploying the ESBM method at Company A, Company B and Company C will be discussed. The discussion will be based on the outcome described in section 7.1 and observations from the facilitators during the workshop. To structure the evaluation, the discussion has been separated in six sections, each treating a specific part of the evaluation: outcome (7.2.1), knowledge of the project (7.2.2), impact of the group (7.2.3), changes to the deployment process (7.2.4), the effectiveness of the deployment process activities (7.2.5), number of benefits (7.2.6) and the use of groupware (7.2.7).

7.2.1. The outcome

Starting at the benefit definition, the ESBM method helps improving the benefit definition. During the workshops we have seen the participants having difficulties entering information in the benefits aspects when the benefit itself is ill-defined. After the participants improved the definition of the benefit, the discussions on the benefit aspect improved and the information was entered more easily. Participants were unable to enter information in the aspects when the benefit was ill defined, meaning that the ESBM method (or the benefit aspects) forced the participants to revise the benefit definition, which happened at 75% of the benefits . So using the ESBM method starts by improving the quality of the benefit definition.

Looking at the overall outcome we can conclude that the ESBM method has helped each of the companies identifying (additional) benefits and making them more specific, feasible and relevant. The ESBM method also improves the manageability of the benefits. Furthermore each of the case owners value the additional insights created by using the ESBM method for the project. Last but not least, the case owners esteem bringing together multiple viewpoints. Besides the additional insight, the multiple viewpoints also create more commit to the project and understanding of the project. Each of the case owners indicated that bringing together the viewpoints (stakeholders) and letting the viewpoints cooperate helps them to manage the project and makes it more easy to reach the goals of the project. It shows that using the ESBM method to structure and ignite discussions generates the outcomes required by the organizations.

The outcome after the 1st and the 2nd workshop differs greatly. The difference in outcome is caused by difference in goals of the workshop: workshop 1 should diverge and workshop 2 should converge. All case owners indicated that the outcome after workshop 1 was too high level, which made it difficult for them to imagine the final outcome. On the other hand, the outcome after workshop 2 was specific and feasible and satisfied the abstraction level for the case owners. The same effect is likely to occur in the participants evaluation as well.

7.2.2. Knowledge of the project

Looking at the outcome per case we can see a difference in quality of the outcome. The main difference in quality lies at the specificity of the information entered in the benefit templates. This especially counts for the information in the benefit aspects, but it also holds for the definition of the benefit itself. The benefits at Company A, for instance are more focused on the business processes, where the benefits at Company C are more focused on the organizational level and still need to be translated to business processes to make them more specific. In the benefits aspects the difference is even more striking. With only a very limited amount of additional work, the benefits of Company A can be entered in the business case and used to manage the project. For Company C, an additional session would be required to reach the full potential of the benefits identified. Rating the quality of the benefits in the three cases *in relation to each other* therefore results in: Company A (high), Company B (moderately high) and Company C (moderate).

The knowledge a company has on the project follows the same pattern: Company A (high), Company B (moderate) and Company C (low). We must note that, for Company B to arrive at moderate level, participants increased their project knowledge between the workshops. They increased the knowledge in two ways: adding knowledgeable (on the project) participants and gathering required information for workshop 2. The patterns, quality of outcome and project knowledge, seem to be heavily related. An increase in project knowledge seems to result in an increase of the quality of the outcome.

7.2.3. The impact of the participating group

The composition of the groups at the workshops differs between the cases. In all cases, all viewpoints are represented, only the ratio between IT participants and business participants differs, where IT-participants are participants who work in IT for the organization and business participants are participants who work in and with the primary process of the organization. For Company A and Company B the ratio IT to business is approximately 1 to 3, where at Company C the IT to business ratio is 4 to 1. The groups were short on business knowledge, as described in the process section of Company C (see 7.1.3.2), which made it difficult to reach the full potential of the benefit. These observations were not made at Company A and Company B, which leads us to believe that the ESBM method will only work optimally when the ratio between IT and business favors business (most likely IT to business: 1 to 3, as was seen in company A and B). This way the number of business (most likely subject matter experts) are able to add required knowledge on the business processes to the group, in return, this increases the knowledge available to discuss the benefit exhaustive.

The workshop groups in the different cases also differ in size, Company A (6), Company B (9) and Company C (21). Looking at the outcome and process during the workshops for all cases, we can see that the process was less efficient at Company C. This resulted in the creation of consolidated benefits to select the five most important benefits, in return, this lead to high level benefits. The high level benefits proved to be too abstract to enter the information for the several benefit aspects. To put it in other words, prioritizing with a large group resulted in compromising the specificity of the benefits. Purely based on the outcome we can therefore conclude that, for the workshops, the optimal amount of participants is between five and ten.

7.2.4. Changes to the deployment process

In comparing the original deployment process (see Figure 12) to the process used in the workshop for each of the cases, we can see the basic setup is still standing. The only structural change to the

basic deployment process is switching “do benefits match goals”, which in all cases was caused by a shortage of time for the workshops. This was not only the case for workshop 1, but also for workshop 2. When discussing the workshops with the participants, the participants always indicated they would like more time to work on the benefit. Looking at the final outcome in all cases, we can conclude that each of the benefits can be improved even further when more time was available. Company B showed that extending the 2nd workshop to 4,5 hours is a step in the right direction.

Even though the basic setup of the benefits is still standing, several changes were made. The changes were made for three reasons: to improve the deployment process based on the outcome and process of workshops in other companies (1), to tailor the workshops to the respective case (2) or to improve the quality based on workshop 1 (3). For the first reason this means that improvements found, in previous workshops at other companies, were used in subsequent workshops i.e. improvements found in workshop 1 at Company A were used in workshop 1 at Company C and improvements found in workshop 2 at Company C were used at Company A and B. The time schedule of the deployment process in the three cases has been illustrated in Figure 14, that also shows which evaluation (questionnaire) was generated on which moment in time and after which activity. Five main improvements were translated to subsequent workshops:

- postponing matching the benefits to the goals
- decreasing the priority of matching benefits to the goals
- increasing the priority of defining the interdependence between benefits
- flexible planning

The changes were only implemented on behave of their success in the previous workshops. All have shown to contribute to an improved deployability of the ESBM method and to an improved quality of the outcome.

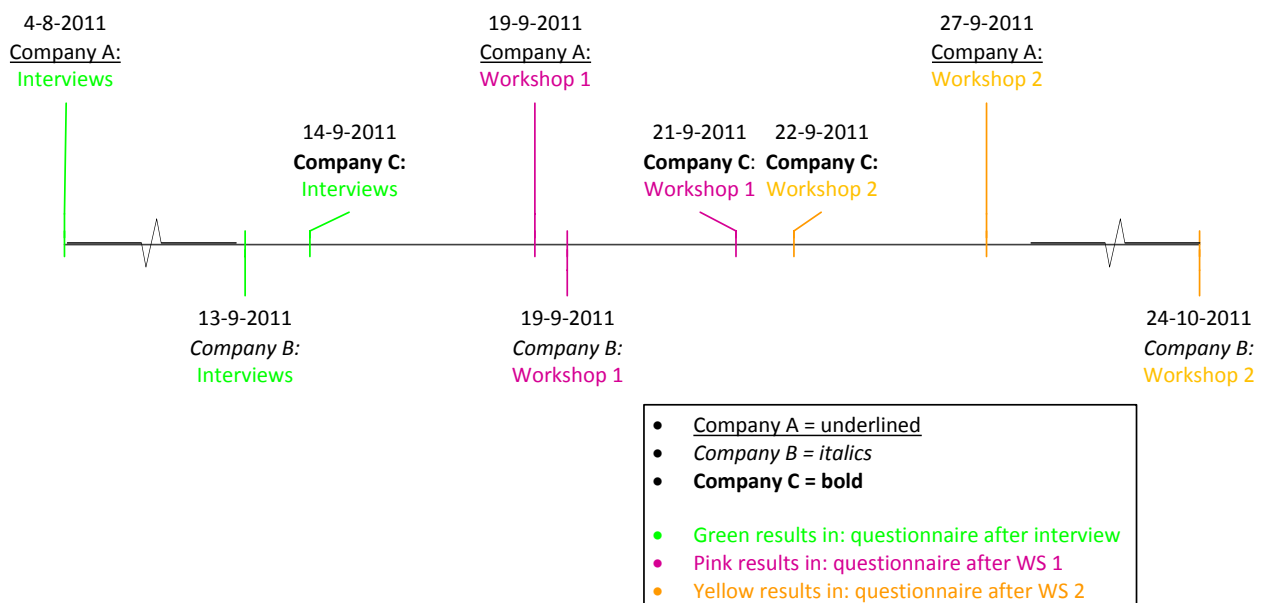


Figure 14 Cross case deployment process over time

To tailor the workshop to the respective cases was the second reason to change the deployment process. These changes were made in Company B and Company C. At Company B, the commitment of the case owner and the participants provided the opportunity to add an intermediary discussion of

the benefits to the deployment process. When discussing the current outcome with the participants, the participants increased their understanding of the benefit template and the grounds to prepare Workshop 2. Company B's outcome (see 7.1.2.3) shows that the quality of the benefits substantially increased in Workshop 2. The outcome suggest the intermediary discussion would be beneficial for future workshops, although one has to bear in mind that the organization has to be able to provide the required time and commitment. At Company C the deployment process had to be tailored to make it suitable for the large group. The process, and the highly improved quality of outcome during workshop 2, show that the changes have not diminished the suitability of the ESBM method.

The third reason to change the workshop were made to increase the result from the previous workshop at the same company: adding the benefit (re)definition activity before completing the benefits and providing the participants with a manual and example benefit. Both changes were made to improve the quality of the outcome. Redefining the benefits (performed for 12 out of 16 original benefits) greatly improved the quality of the benefits and the participants often used the example (to a lesser extend the manual) for reference.

Reviewing all changes made to the ESBM method deployment process indicates the changes have a positive effect on the outcome of deploying the ESBM method.

7.2.5. Effectiveness of the deployment process activities

The individual activities of the deployment process (and therewith the ESBM method) proved their value during the workshop. Determining the goals of the project with all participants, let to a shared understanding of the project to be executed. Identifying and brainstorming resulted in each case in at least a tenfold of the benefits described by the case owners upfront. The most important activity of the ESBM method (and its deployment process) remains however entering information in the benefit aspects. Requiring participants to enter aspects in the template engaged in each workshop a healthy and valuable discussing. Even when the discussion topic did not result in new information in the benefit template, it still helped the participants to create additional insights in the project. For the benefit aspects themselves an additional explanation and example was required and provided for workshop on the benefits in workshop 2, which helped the participants to enter the correct information in the benefit template.

To enter information in the benefit aspects, two forms have been used: rotating on the benefits in groups (1) and working as a group on one benefit (2). It is difficult to indicate which form generates better results, (1) creates more synergy, while (2) creates more depth in the outcome. (2) has only been used at Company C with a group of 21 participants. In the previous section we have seen that the optimal number of participants is between five and ten. Assigning five benefits to ten participants would result in groups containing only two participants, which most likely will result in a decrease of the improved depth of the outcome. For the current ESBM method we can therefore state that the rotation option is the most viable.

Matching the benefits with the goals provided an overview that was used to check whether the goals match with the benefit and was valuable for the project. However, discussing why specific connections were present did not provide additional information for the benefits or the project. Determining the interdependence between the benefits proved to provide more valuable information than connecting benefits with goals. Based on the dependence identified, the group improved the benefits by revising the effects (results) of the benefits involved.

Despite the success of the steps described above, another aspect to be the most valuable asset of the ESBM method. The process at all of the companies shows that the ESBM method is a valuable tool to ignite and structure discussions amongst the participants. The ESBM method helps to get the participants' knowledge into the discussion, as most of the participants represent a different viewpoint. The ESBM thereby increases the quality of the discussion, which in return leads to a higher quality outcome. All case owners indicated that the increased insights, acquired from the discussions, help them managing the project.

7.2.6. Number of benefits entered in the template

Originally the ESBM method has been developed to enter each of the benefits identified into the benefit template. When creating the deployment process it was selected to enter only five benefits into the benefit template. This meant that all other benefits will not be discussed further during the workshops. Looking at the outcome, we think that additional benefits in the template would have increased the value of the result and reduce the difficulties of selecting the benefits to be entered in the benefit templates. But then again, the current workshops are already short on time. Choosing the workshop as part of the deployment process has thereby created a deficiency to the ESBM method. Mending this deficiency seems to be impossible as the precious balance between quality of the outcome and available time will be harmed.

Would it than be beneficial to let adopting organizations enter the remaining benefits in the template? Based on the results, we have seen that the quality of benefits increases when using the benefits template. However, this only works when the benefits are discussed within the right group (as discussed in 7.2.3). The answer would therefore be that it would be beneficial to let adopting organizations enter all benefits into the template, but only when this is a group activity.

7.2.7. Using groupware (Spilter)

Spilter was used to ease the process to identify and select benefits to be used in the benefit template. To review Spilter's performance, three characteristics will be discussed, each in relation to committing to paper: creating an overview, collaborative working on one item and usability. For each of the characteristics the process and outcome from the Company A and Company B cases will be used to rate its performance. Using Spilter has improved the process and quality of categorizing the benefits on the dimension importance and size (creating an overview). However, the most substantial improvement by Spilter was on selecting the benefits, as we can see by looking at the high level, consolidated benefits which were selected when not using Spilter at Company C. Prioritizing the benefits (working on one item) was more exhaustive and more participants were involved, which means that Spilter improved the collaborative working on one item. However, Spilter does have its own flaws. In the current format of the ESBM method, Spilter can not be used for large groups, as managing the results would consume too much time. Managing the results requires, even when using Spilter, a large amount of interference by the facilitator in order to be suited for the ESBM method. Nevertheless, for future workshops the improvement of the process and the quality of the outcome outweighs the peculiarities of Spilter.

7.3. Cross case analysis of participant's evaluation of the ESBM method

The second base to evaluate the ESBM method on the is analyzing the participants' evaluation of deploying the ESBM method. To collect the opinions of the participants a questionnaire has been developed (see 4.3.4 and Appendix C: Benefits management questionnaire). The questionnaire has five items that will be evaluated by the participants: use of business cases, maturity of benefits management, deployability, quality of the outcome and efficacy. Each of the items has several indicators, for the tables each of the indicator has been assigned a letter to improve the readability of the results (see Figure 15 for the items, indicators and their corresponding letters). The participants were asked to rate each of the statements in the questionnaire on a likert scale starting at 1 (completely disagree), ending at 7 (completely agree).

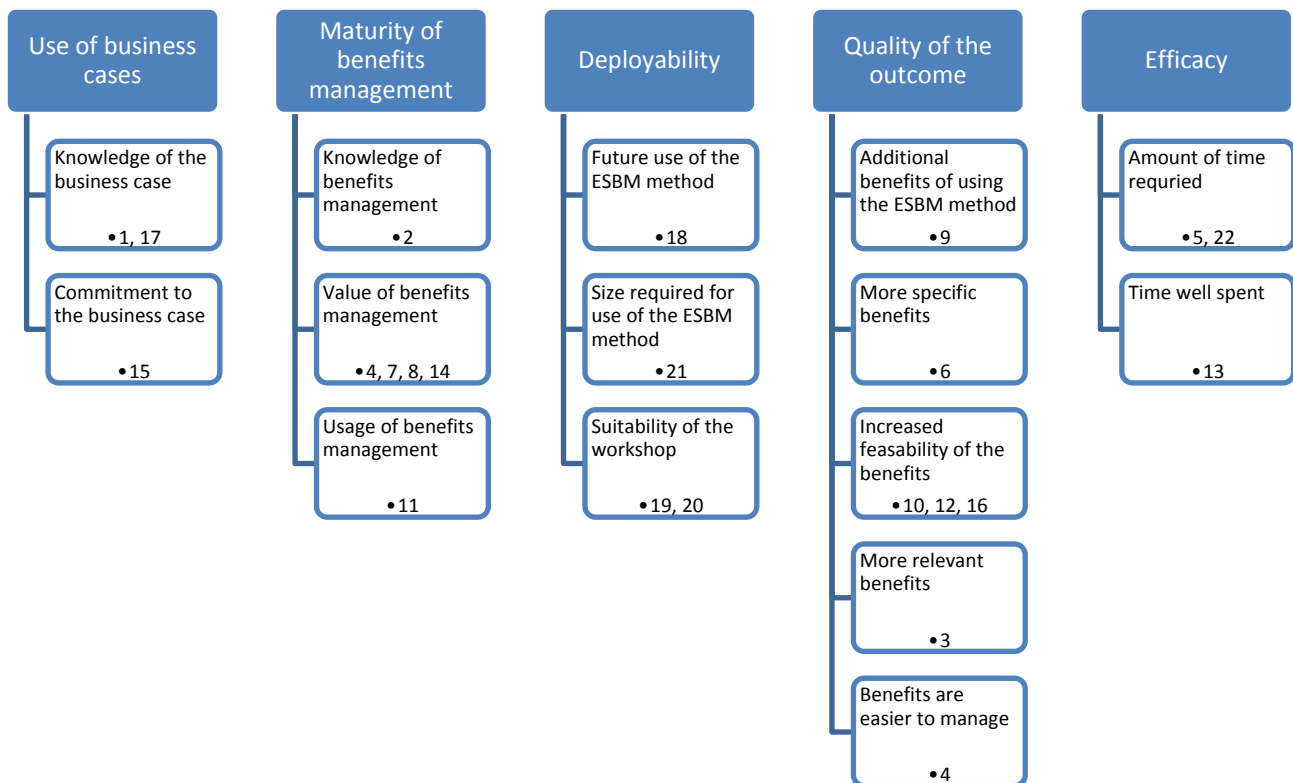


Figure 15 Validation items, their indicators (which are converted to the corresponding letters in the questionnaire results)

The questionnaire has been answered by a total of 32 participants of the workshop. The participants are divided over the cases as follows: Company A (6), Company B (8), Company C (18). Three questionnaires were used to be able to identify trends and changes during the deployment process of the ESBM method: the first after the interview round, the second after workshop 1 and the third after workshop 2. For the results on the trends and changes during the process only the results from participants who actually answered three questionnaires are used. This were, in total, 15 participants, divided over Company A (6), Company B (6) and Company C (3). The results of the questionnaire as well as a detailed analysis of the results can be found in Appendix D: Analysis of the validation results. Based on this detailed analysis, induction and a comparison of the questionnaire results with the evaluation the deployment results, the most important conclusions drawn from the participants evaluation will be provided in this section.

7.3.1. Use of business cases

The participants on all cases rate their “knowledge of creating business cases” and their “knowledge of reading and interpreting business cases” high. The results from Company C indicate a significant lower rating of the knowledge of creating, reading and interpreting business cases, this can, most likely, be explained by the high amount of IT participants (75% of the participants had an IT background). The lower rating on knowledge for creating, reading and interpreting business cases also provide an additional reason to explain the lesser quality of the outcome at Company C. The participants in all cases indicate a high “commitment to the business case”, that slightly increases while working with the ESBM method. For the ESBM this means that not only the case owners value the cooperation and commitment, the questionnaire results show that commitment to the business case of the project increases at the participants.

7.3.2. Maturity of benefits management

The participants indication of “knowledge of benefits management” started at a neutral level (≈ 4) and increased to a high level ($\approx 5,5$) while working with the ESBM method. As an effect of the increased knowledge of benefits management the participants indicate a decrease in the “use of benefits management” during the successive questionnaires in the deployment process. The increase of knowledge has made participants realize that they do not use benefit management in their current activities. The participants assign high ratings to the indicator “value benefits management”, it increases the “transparency of the added value of benefits” (≈ 5) and it “helps making better decisions in the project” (≈ 3 , negatively posed question). The questionnaire results have shown that the maturity of benefit managements for the participants in the three cases is only moderate, the “usage of benefits management” is neutral (≈ 4) and the only knowledge available on benefits management is derived from working with the ESBM method (only the ESBM method is used and knowledge of benefits management increases while using it).

The indicators for the “maturity of benefits management” at Company B score higher than for the other cases (≈ 1 point on the likert scale), this can explain why Company B showed the commitment to create the intermediate benefit discussion with the participants. In 7.2.1 we noticed that the outcome at Company C is of less high quality than at the other companies. This could potentially be explained by lower ratings on the “maturity of benefits management”. The questionnaire results do not support this explanation, the ratings for the “maturity of benefits management” at Company C are only slightly lower than Company A’s ratings. We should therefore conclude that the lesser quality of the outcome at Company C is not caused by a lower “maturity of benefits management”. The knowledge of the project, as discussed in 7.2.2, therefore is the most likely explanation for the lesser quality at company C.

7.3.3. Deployability

The participants in each of the cases rate “future use of the ESBM method” high (≈ 3 , negatively posed question). They also rate the “suitability of the workshop” high (< 5). The indicator “future use of the ESBM method” differs after workshop 1 ($\approx 3,5$) and workshop 2 (≈ 3), which can be explained by the difference in type of outcome present after both workshops: broad after workshop 1 and specific after workshop 2. The difference supports the case owner findings on the results from both workshops, who also valued the outcome of workshop 2 more than the outcome of workshop 1 (see 7.2.1 for more detailed information)). The participants indicated they would use. The above shows

that the deployability of the ESBM method is good, participants would use it for future business cases and the workshop is suitable to work with the ESBM method.

Between the cases a significant difference is present for the participants' ratings of the "suitability of the workshop" at Company A and at Company C. The participants at Company A rate it very high (≈ 6), where Company C rates it high (≈ 5). The difference can be explained by looking at the outcome (see 7.2.2) and the process (see 7.2.3) of both groups. The process at Company A was more smooth and the output was of a higher quality, resulting in a higher appreciation of the workshop. Company B scores between the other cases, both at the "suitability of the workshop" and the outcome.

Between the cases a large difference is also present for the "size required for use of the ESBM method". The participants at Company C's indicate an average threshold of €3.330.000, which is more than a tenfold of the average indicated by participants at Company A (€280.000) and a sevenfold of the average indicated by participants at Company B (€ 500.000). Even when correcting the measurement for one participant at Company C who entered €10.000.000 in all three questionnaires, the average at Company C is still two times higher than at Company B. The main explanation for this lies in the high number of participants (which cost money) present at Company C. The indicated minimum threshold decreases, between the questionnaire after the interview round and after workshop 1, and increases between the questionnaire after workshop 1 and workshop 2. This can be explained by looking at the outcome of the workshops, before entering workshop 1, participants believe finding benefits is a hard task. During workshop 1, the participants see a large amount of benefits, which increases the added value of the ESBM method. After workshop 2 the participants see that there is still work left, even after the complete deployment method. This explains the raise in minimum threshold for the project. The overall questionnaire result for the minimum threshold shows that using the ESBM method becomes viable at projects starting at €500.000.

7.3.4. Quality of the outcome

The quality of the outcome is the most important item of the ESBM method to be validated as it directly shows whether the ESBM method attains its objectives: more specific and feasible benefits. The questionnaire results show that using the ESBM method makes benefits: more specific (J), more feasible (K) and more relevant (L). Simultaneously, the ESBM method helps to find additional benefits (I) and helps the adopting organization to manage the projects better (M). The participants value the increased specificity and increased manageability made possible by the ESBM method most (in all questionnaires). The results from the indicators for the quality of the outcome can be seen in Figure 16.

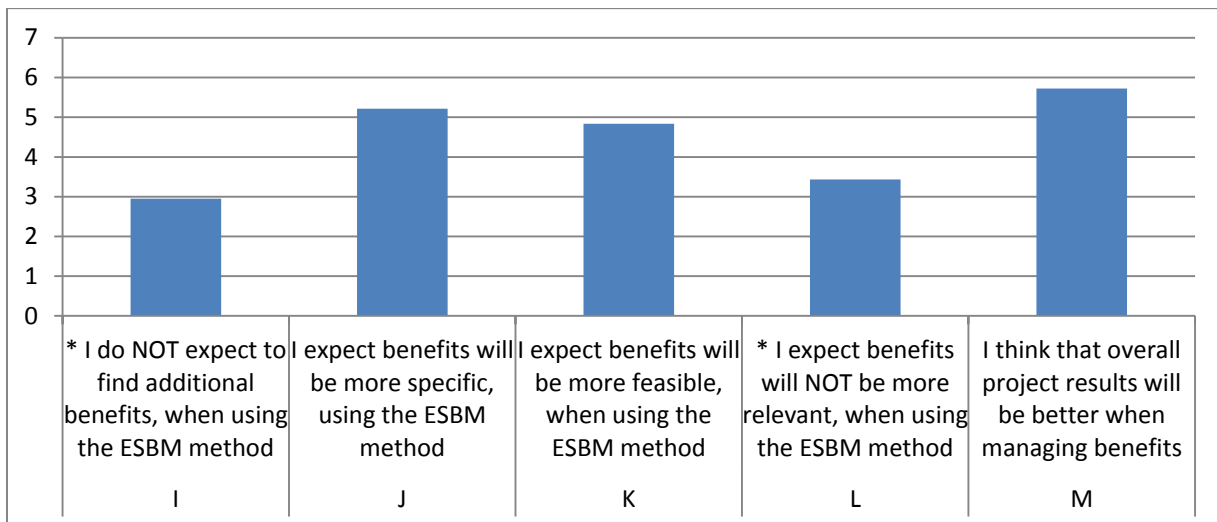


Figure 16 Quality of the outcome

The results show that the participants' rating on "more relevant benefits" experiences a dip in the questionnaire after workshop 1 ($\approx 3,5$, negatively posed question). This supports finding that the difference in outcome from both workshops has a high impact on how participants rate the ESBM method (see 7.2.1). Again the difference in setup of the workshops (workshop 1: diverge, brainstorm; workshop 2: converge, finish) and their corresponding outcome, generates these results.

There are two substantial observations when comparing the participants' rate on the item "quality of the outcome" between the cases. The participants rating on "more specific benefits" matches with the findings of the case owners and the facilitators (see 7.2.1). Even though each case has produced specific and feasible benefits, there is a difference when comparing the quality of the outcome of their work. Company A produced the highest quality of the outcome and the participants rate it highest ($\approx 5,5$). Company C has the least high quality of outcome, the participants rate it least high ($\approx 3,0$). Company B, on both ends, scores between the other cases. Second, the participants at Company B rate the "better project results when managing benefits" higher than Company A and C ($\approx 5,8$). This can most likely be explained by the higher benefits maturity at Company B as found in 7.3.2.

7.3.5. Efficacy

The participants indicate that using the ESBM method takes a significant amount of time (8 hours per participant on average), but the participants ratings on "time well spent" (≈ 5) indicate it is time well spent. The time consumption required by the ESBM method is displayed in Figure 17 (average time consumption per participant) and Figure 18 (total time consumption per company). The total time consumption for the cases is:

- Company A, 6 participants, 50 hours
- Company B, 8 participants, 65 hours
- Company C, 21 participants, 120 hours



Figure 17 Average time consumption per participant

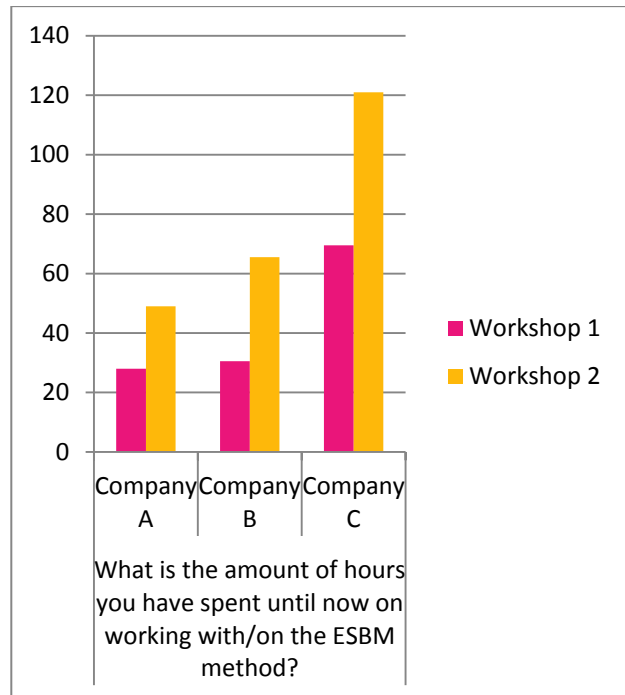


Figure 18 Total time consumption of the ESBM method

7.4. Recommended improvements for the ESBM method

In the previous two sections we have seen that the ESBM method in its current form will help organizations in making the benefits side of their ES business cases more specific and feasible. This does not mean the ESBM method is without (minor) flaws. Especially when we look at the descriptions of the process at the cases and the corresponding outcome and deployment process, a few improvements can be made.

7.4.1. Specificity of the benefit definition

The first challenge is on the specificity of the benefit definition. In each case, participants were having difficulties entering information in the benefit aspects when the benefit was ill-defined. However, looking at the process at Company A, the participants had less difficulties entering the information of the benefit aspect. This was mainly due to the improved knowledge of the project. To achieve this at other projects, an additional workshop should be added before workshop 1. In this workshop the C-level (CEO, CFO, COO, etc.) managers should be invited. Goal of the workshop should be to identify the main / high level benefits of the ES to be implemented. Based on the main benefits the experts on the related processes should be determined and invited for (the original) workshop 1. Workshop 1 then contains sufficient process experts (subject matter experts) to fully specify and elaborate the identified benefits.

Another improvement to make the benefit definition stronger is to add an activity where the participants, together, define the benefit found. The activity should be placed before the benefits are entered in the template. The goal of the activity is on building a shared understanding of the benefit and define what the benefit specifically is. The participants should be provided with a clear manual of the ESBM method and the definition process to increase the added value of this activity.

7.4.2. Agenda of the workshops

The second challenge is on the planning, or agenda, of the workshops. During the workshops the time was too short to really dive into all benefits, at the same time activities were already postponed to the 2nd workshop. The duration of the first workshop was in all cases three hours (at Company C, half an hour was added for explanation and making the workshop suited for a large group), which was too short. In workshop 2 (except for Company B) the time pressure was too high to provide participants with the time required to review each benefit in depth. For future workshop the duration of both workshops should be at least four hours.

Looking at the difference in outcome between Company C and the other cases, the time between both workshops is an important factor for the final result. For Company A the preparation time was a week, for Company B it was even more than a month. The outcome from both of the cases show that preparation time should be more than one day (Company C).

Discussing the benefits with the (assigned) participants at Company B, between workshop 1 and 2, proved to be a highly valuable addition to the deployment process. The quality of the outcome increased substantially and more, as well as more in-depth, discussions were ignited in workshop 2. For future use of the ESBM method, this intermediate discussion should be added to the deployment process, between workshop 1 and workshop 2. Goal of the discussion should be to discuss the current benefit, potential improvement areas of the benefit and trigger the participant to view the benefit in multiple perspectives. The discussion should last at most half an hour per benefit.

Another improvement is on the time given to activities. The added value to the final outcome of matching benefits with goals is less than expected, while defining interdependence between benefits provided more added value to the end result than expected. For future workshop this means three changes. Matching benefits with the goals will be transferred to workshop 2 and will be shortened in duration. To do this, connecting the benefits and the goals should not be performed collectively. The participants should make the drawing in multiple groups. The facilitators will consolidate the result and check whether all benefits have a connection and each goal receives a connection. If both requirements are satisfied no discussion will be required. Defining the interdependence between benefits should be lengthened. To do this a review of the benefit result (Measurement of effect) will have to be added to the interdependence activity. During the review the participants will look at each positively related couple of benefits, for each benefit the participants will check which of the benefits outcomes will be achieved by the which of the benefits.

7.4.3. Participants

The third challenge is to gather the right participants. Especially at Company C, the group of participants made it difficult to achieve the optimal result with the ESBM method. At company C there were 21 participants from which only 25% had a business background, this provided two issues (see 7.2.3): the group was too large and the business / process knowledge was insufficient. Looking at the other cases, we can see that business represents 66% to 75% of the participants, where the number of participants does not exceed ten. For future workshops this means that the number of participants should not exceed ten, consisting of at least 66% participant with a business background.

7.4.4. Tools

When participants would like to work on the benefits between workshop 1 and workshop 2, they are not provided with a “location” in which the benefits can be adjusted. Providing such an opportunity

would increase the efficiency of the preparation for workshop 2 and reduces the barrier to start working on the benefits. For future use, an opportunity for online entering of content in the workshop outcome should be made available between workshop 1 and workshop 2.

In supporting the process, Spilter, did a decent job. However, it requires significant oversight and manual administration from the facilitators, this decreases the focus of the facilitator to the ESBM method. Moreover, the ESBM method benefit template currently is an Excel diagram. To process the outcome in the template and optimize them for visualization, requires a significant amount of time. To reduce the time required and increase the ease of entering answers for the participants an online tool should be created which facilitates the entire deployment process.

7.5. Summary of deploying the ESBM method

The ESBM method has been deployed in three different cases. At Company A the ESBM method has been used to identify the benefits for implementing a planning module on their ES system. At Company B the ESBM method has been used to identify the benefits for a roll-out of their global ES to a local entity and at Company C the ESBM method has been used to identify the benefits of consolidating several entities of their ES and upgrading it to a new version. In all cases the ESBM method has helped the companies to improve the quality of the benefits in five areas (indicated by the case owners and participants):

- Additional benefits are found by the organization
- Increased specificity of the benefits (less abstract)
- Increased feasibility of the benefits (benefits are more likely to be achieved)
- Increased relevancy of the benefits to the project in question
- Increased manageability of the benefits

In 75% of the benefits, redefining the definition of the benefits in workshop 2, further increased the quality of the outcome. Next to the improved quality of the benefits, the ESBM method has provided the companies with more insights in their projects (which is highly valued by the case owners). The additional insights were created by the high number of discussions that were generated by using the ESBM method. The ESBM method, furthermore, helped increasing the quality of the discussions by bringing together multiple viewpoints (stakeholders) and structuring the discussions by requiring specific input in the benefits template. Lastly, the ESBM method increases the commitment of the participants (stakeholders) to the business case of the project.

Using the ESBM method becomes viable for ES projects with a minimum budget of around €500.000. Using the ESBM method requires (at minimum) six participants to invest 8 hours per participant. The participants (in each case) indicate that the time required by the ESBM method is time well spent and that the ESBM method would be used for future business cases.

For future deployment of the ESBM method a few improvements can be made to the deployment process, the most important are listed below:

- Extending the duration of the workshops to four hours
- Adding a C-level workshop before workshop 1 to identify the high level benefits
- Adding a discussion of benefits (assigned to a participant) between workshop 1 and 2
- The business participant vs. IT-participant ratio should be at least 3 vs. 1

8. ES benefits management method, the verdict

This research started with the notion that IT, and with that, ES projects often fail. The ESBM method was created to help organizations determine and manage their benefits, thereby reducing the failure rate of ES projects. In the previous chapter the outcome of deploying the ESBM method has been described and analyzed. This chapter will provide the final verdict on the ESBM method, is it capable of providing accurate and feasible benefits, while still being operational for use? The chapter will start with the conclusion of this research. The conclusion (8.1) will provide the answer to all research questions and will tell us whether the ESBM method reaches its goals. The research and the conclusion of the ESBM method will then be used to describe the contribution of the research (0), both to literature (8.2.1) and practice (8.2.2). The contribution will be followed by a review of the validity of this research in section 8.3. Section 8.4 then provides some ideas for future work, based on the results and findings of this research. The structure of this chapter can also be seen in Figure 19.

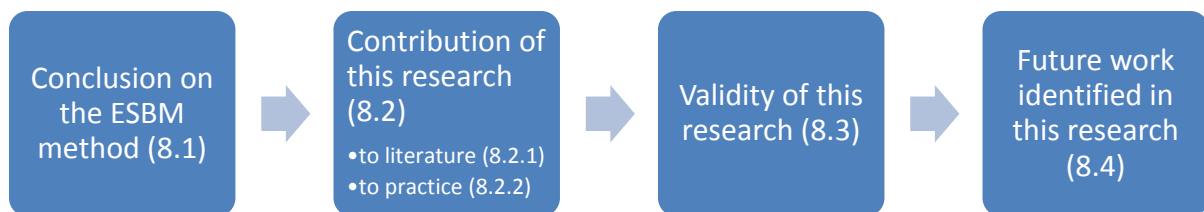


Figure 19 Structure of chapter 8

8.1. Conclusion

The ESBM method has been developed to overcome the difficulties companies face when building the business case of their ES projects. Previous research reported on the opinion of experts on the method and validated the benefits template of the ESBM method. However, the complete ESBM method has not been validated in an ES project before. This research was set out to *provide validation for the ES-benefits management method by using it in real life cases and assessing it on its usability*. For a successful validation of the ESBM method, the ESBM method should be able to attain its original goals: a more *realistic* and *operational* ES-benefits management method. Where realistic is referring to the accuracy and feasibility of the expected benefit and where operational is referring to the fit for use for BC building practitioners. This led to the following main research question: *How to design and evaluate a deployment process for the ESBM method, that is applicable for adopting organizations, and leads to accurate and feasible benefits?*

The first research question for validating the ESBM method was to determine a proper validation technique. Based on the requirements found by reviewing the ESBM method, Technical Action Research (TAR) was selected as validation technique for the ESBM method. For proper validation, TAR required to find cases at which an ES implementation business case was to be built. Three cases were found that satisfied the case criteria and were committed to validate the ESBM method: Company A, Company B and Company C. Validation of the ESBM method in these cases was performed by deploying the ESBM method in the business case development project and discussing the outcome of this deployment with the case owners. Further, the results of several questionnaires, asked at different points in time, were used to validate the ESBM method. TAR proved to be a valuable validation technique for the ESBM method. The main reason for choosing TAR as the

validation technique was because it was suited for validating items that were designed. TAR provided a clear and helpful structure for validating the ESBM method, which shows that it was the right choice.

The second research question was to determine the deployment process that is most suited for deploying the ESBM method in organizations. The requirements found by reviewing the ESBM method for deployment constraints were used to scope the search for a suitable deployment process in practice and literature. Interviewing business experts (e.g. on business cases, enterprise systems) on deploying the ESBM method resulted in an interview round to prepare the participants and multiple workshops (problem-focused exercise that actively involves participants) to work with the ESBM method. Insights from requirements elicitation and methodology literature confirmed the deployment process suggested by the business experts.

The information provided by the business experts was highly contributing to finding the most suited deployment process, while requiring a minimal time investment. The literature, on the other hand, was not able to provide valuable (in depth) insights on how to deploy a method, while requiring an exhaustive time investment. Researching (especially) the requirements elicitation literature, showed that workshops are often used, but hardly any research is present on how to design them. If guidelines and procedures on how to develop and deploy the workshops and interview would not have been provided by the business experts, literature would not have been able to fill in the gap. For future research in this area, this thesis is helps to close this gap, by showing how the deployment process of the ESBM method has been designed.

The third research question was to determine and design the contents of the interview and workshops, in other words, to design the deployment process. In designing the deployment process, workshop forms found in literature and knowledge from business experts were used to create the deployment process as provided in Figure 20¹.

To arrive at the deployment process contents, seen in Figure 20, we started at the workshop examples provided by literature on the requirements elicitation and methodology topics. Apart from the work of Gottesdiener (2002), these workshop examples provided mainly high level content for the workshop. The work by Gottesdiener was the only literature source specific enough to directly add valuable content to the workshop. However, business experts provided more contribution to end result. In 6.2.3.2 the setup as proposed by the business experts is illustrated. Comparing it with the current design of the deployment process shows us that, for three quarters, the setup provided by business experts is still standing. Especially the techniques provided by business experts to achieve specific results (e.g. shared state of mind) proved to be valuable for conducting the workshops. Nevertheless, the ESBM method itself was still the main contributor to the deployment process contents. The main steps of the ESBM method and the extent to which the processes are described made designing the deployment process relatively easy. In fact, designing the deployment process without the help from business experts and literature would be possible, without bearing a too large decrease in quality. This shows that the ESBM method, even without the deployment process, already made a significant step in being applicable and usable in adopting organizations.

¹ Based on evaluating the ESBM method “Do the benefits support reaching the goals” has been reassigned to workshop 2, originally it was placed in workshop 1

² A look at the raw data of the questionnaire tells that one participant at Company C entered € 10.000.000 for each questionnaire (3 times in total). Correcting the results for this finding provides an average for Company C

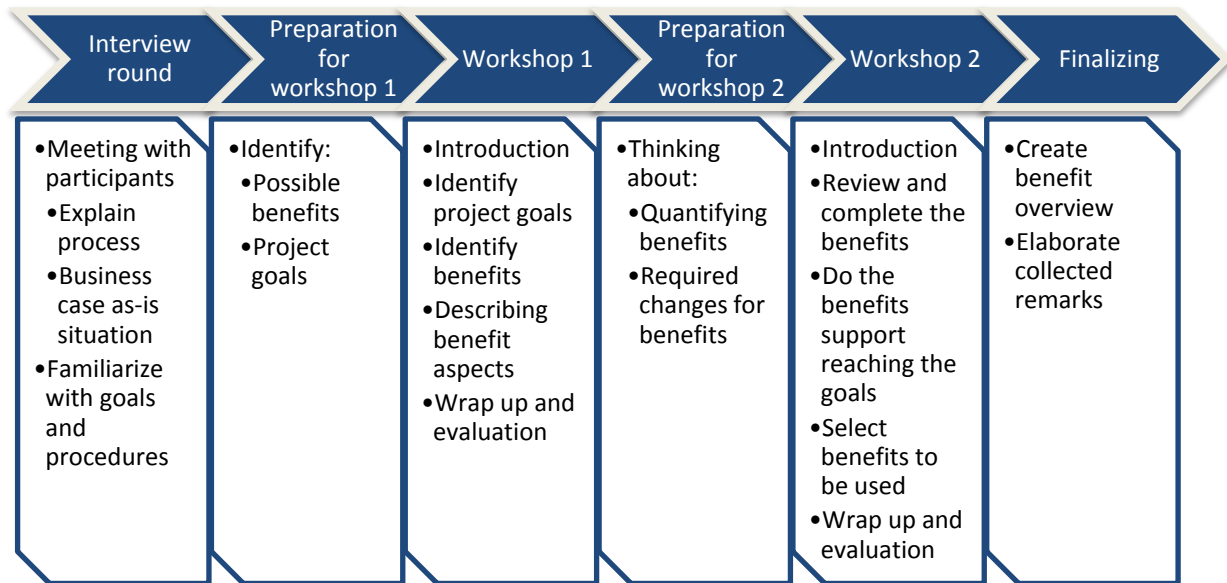


Figure 20 Overview of the ES benefits management deployment process

The second and third research question have provided answer to the first part of the main research question: *Technical Action Research can be used to validate the deployment process described in Figure 20.*

The fourth and final research question to validate the ESBM method consisted of actually deploying the ESBM method in organizations and evaluating the outcome. The results of deploying the ESBM method at Company A, Company B and C consisted of two sources for validating the ESBM method: the ESBM method outcome (the benefits) and the questionnaire results (the participant's evaluation of using the ESBM method). Both results show that the ESBM method greatly improves the quality of the benefits for an ES implementation business case. The benefit quality improvements by using the ESBM method can be seen in five areas (as indicated by the case owners and participants):

- Additional benefits are found by the organization
- Increased specificity of the benefits (less abstract)
- Increased feasibility of the benefits (benefits are more likely to be achieved)
- Increased relevancy of the benefits to the project in question
- Increased manageability of the benefits

Merely judging the outcome with the case owners and facilitators indicated that the benefits found were specific and feasible for the ES project at hand. Next to the improvements in the quality of the benefits, using the ESBM method results in increased business case (and project) commitment of the participants involved in the workshops. Last but not least, deploying the ESBM method generates increased insights in the project. More knowledge is created on project requirements, milestones and the impact on the organization by the project. All of these benefits of using the ESBM show that the third part of the main research question can be answered: *The ESBM method creates accurate and feasible benefits.*

The main element used by the ESBM method to create accurate and feasible benefits is providing the participants with a platform and process that generates discussions. Bringing together the six viewpoints and guiding the participants through the deployment process of the ESBM method,

requires the participants to specifically define how they see a benefits (due to the benefits aspects). When participants specified the aspects of the benefits further, the discussion intensified and more details (relevant to the project) were found. This synergy of the viewpoints in the discussions could not have been reached without the ESBM method, as it provided the means to ignite the discussions amongst the representatives of the six viewpoints.

Participants indicate, and the outcome shows, that the ESBM method is operational for use. The workshops are well suited for using the ESBM method, the participants indicate that using the ESBM method is time well spent and in each of the companies the ESBM method would be used for future business cases. Deploying the ESBM method requires on average 8 hours per participant with a maximum of 10 participants. When it comes to inviting participants, it is important to keep in mind that at least 66 % of the participants needs to have a business background to make sure sufficient knowledge is available on the impact of the benefits on the organization and the required changes to achieve these benefits. Based on the results, the ESBM method is viable to use when the budget of the ES project exceeds €500.000. Together, these observations provide the answer to the second part of the main research question: *The ESBM method is applicable for use by adopting organizations.*

Answering both aspects of the main research questions provides us with the main conclusions of the research: *the ESBM method provides accurate and feasible benefits, while being applicable for organizations.* Therewith the ESBM method attains its original goals of providing a benefits management method that creates more realistic benefits and directly can be used by organizations.

For future deployments of the ESBM method a few improvements are recommended. The main improvements to the ESBM method are to increase the duration of the workshops (1), add a C-level workshop before workshop 1 (2) and add discussions on the benefits between workshop 1 and 2 (3). Increasing the duration of both workshops to four hours (1) increases the time available for participants to work with the benefits, thereby providing the option to really consider the benefit in-depth. This also provides the opportunity to add a benefit definition activity to the workshop, in which the participants create a shared understanding of the benefit and define it more specifically. Adding a C-level workshop (2) will help to make the benefits more specific. In this workshop the C-level (e.g. CEO, CFO, COO) managers use the ESBM method to identify the high level benefits of the projects. For each of the high level benefits they also identify the required business experts and invite them for workshop 1. During workshop 1 the business experts will team up with the other viewpoints and continue the regular ESBM method deployment process. The intermediate discussion (3) of assigned benefits with the responsible participant has greatly increased the quality of the outcome, and the quality and number of discussions. For future deployments this intermediate discussion should be added between workshop 1 and 2. The discussion should last around half an hour per benefit and should be aimed at triggering improvements of the benefit by the responsible participant.

8.2. Contribution of the research

The contribution of this research can be divided in two parts, the contribution to literature and the contribution to practice. First the contribution to literature will be provided in 8.2.1, then the contributions to practice will be discussed in 8.2.2.

8.2.1. Contribution to literature

This research sets of with the ESBM method (Oude Maatman, 2010) as basis. The ESBM method was constructed as no IT-benefits management method, created by academics, was used in practice (Ashurst, et al., 2008; Chou & Chang, 2008; Schubert & Williams, 2009). This research shows the deployment of the an IT-benefits management method in three real life case studies, something that is currently not present in the IT-benefits management literature. Each of the case studies provides valuable details and insights for future case studies on IT-benefits management. Most importantly, this research shows the type of benefits management methods practitioners are willing to use. Hopefully this information can be used by academics to further operationalize the field of IT-benefits management methods.

The research performed by Divendal (2010) has validated the benefits template of the ESBM method, in two cases studies. However, the full ESBM method was not validated so far. This research provides the validation in which the full ESBM method has been validated. The validation showed that the ESBM method is capable of providing specific and feasible benefits, while remaining fit for use. To find an operational deployment process, this research has analyzed requirements engineering and methodology literature and consulted business experts to find a suitable deployment process. However, both literature subjects only provided narrow descriptions of workshops (let alone deployment processes). This research shows the entire process of starting at a method and converting it into an operational deployment process consisting of an interview round and two fully designed workshops.

Discussing the outcome with the supervisors and case owners has provided an additional insight, the ESBM method can be used for any substantial (in size) project for which the benefits need to be determined. The outcome, and the process toward it, show that the ESBM method is capable of guiding and igniting discussions. By bringing together multiple viewpoints on the same project and guiding the discussions by the required benefit aspects, the ESBM method produces specific and feasible benefits for the business case of projects. Additionally the participants create an increased (mutual) understanding and insight in the project. When extending the range of the ESBM method, we first need to identify the specific requirements of ES projects. Looking at the results and the discussions, we noticed, that the IT-maintenance viewpoint (maintenance expert) and the ES expertise viewpoint (solution expert) are the only specific requirements for using the ESBM method at ES projects. We think that by replacing the ES expert and the IT-maintenance expert, by an expert on the solution (of the project) and a representative from the unit that has to maintain the result of the project, makes the ESBM method viable for non ES projects. Thus, only a generalization of the IT/ES viewpoints is required to make the ESBM method suitable for any substantial (it still requires a budget of over €500.000) project. A superficial search by the author showed that currently, no operational benefit management methods or techniques are available in literature. Although this is subject to future research, the ESBM method extends benefits management literature with a validated and operational method.

8.2.2. Contribution to practice

The first and most important contribution to practice of this research is that Company A, Company B and Company C have been provided by better manageable, more specific and more feasible benefits and are provided with additional insights in to their projects. Next to these "more measurable" outcomes, these organizations have also seen an increase in the commitment of the participants/stakeholders for the project.

The second contribution to practice is that the ESBM method has provided Company A, Company B and Company C with a hands-on manual to identify and manage their benefits for future projects. Deploying the ESBM method at these organizations, has thereby increased their knowledge of benefits management.

The third contribution to practice lies outside of the validation cases. Validating the ESBM method has shown that the ESBM method is capable of providing a hands-on method for identifying and managing specific and feasible benefits. Based on this outcome, organizations facing a business case of an ES project now have the opportunity to use the ESBM method to increase their opportunity for project success. The project's success can then be reached within budget and time and delivering the results actually desired by the organizations.

The fourth contribution to practice are for KPMG, as the host of this research. The ESBM method has shown to produce satisfied customer, who value the outcome and the process. KPMG now has the basis to convert the deployment process into a (new) proposition for their clients.

8.3. Validity of research

Validating the ESBM method in three cases has provided elaborate insights on how to use the ESBM method. The research has shown that the quality of the outcome increases and additional insights in the projects are gained. The results indicate that benefits become more specific, feasible and better manageable when using the ESBM method (in comparison to using no benefits management method). The three cases, used in this research, represent three different types of ES projects: implementing a module of an ES, a roll-out of global ES to a local entity and replacing the global ES. The diversity of the projects covers the types of ES projects to a great extent. The size of the cases used in the research was small to medium, in ranges starting at several €100.000's and ending in multiple millions. For the validity of this research that means that only large ES projects, starting at tens of millions of euros are out of scope. This means that, with the exception of large ES projects, most of the sizes of ES projects are covered within this research. Both on the type of ES projects and on the size of ES projects, the cases are therefore suited to validate the ESBM method.

The limited amount of time available for this research, in combination with the long project duration of ES projects, diminished the possible validation options available for the research. The results of this research show what the current benefits of the project are and how they are rated by the parties involved. To extend the validity of the research the benefits identified and specified with the ESBM method should be tracked during the projects in which an ES is implemented. The benefit (realization) should then be reviewed during the project and after project completion.

The ESBM method was partially validated by using a questionnaire. In the questionnaire, five questions were formulated in a negative form by adding the word "no" (questions: 1, 3, 8, 9 and 18). The raw data on those questions strongly suggests that participants erroneously answered these

questions, remarks from several participants on the questionnaire support this suggestion. The results on the negatively formulated questions are most likely more positive towards the ESBM method than currently indicated by the results. For the validity of this research this means that the ESBM method will only be rated more positively than it currently is. Therefore, the validity of the research has not been compromised by the negative formulation of questions. However, when using the results from the negative questions for future research, one should first perform a detailed analysis of the raw data.

The changes in the rating of participants over the three questionnaires (interview, workshop 1, workshop 2) during the deployment process have been validated by 15 out of the 32 participants of the workshops. The other participants either missed a workshop, or did not participate in the interview round. This occurred mainly at Company C, where only 3 out of 18 participants participated in all activities. In the other cases just one or two persons were not able to participate in each activity. Two of the cases therefore provide a good insight in the process while working with the ESBM method. However, Company C was the stranger in the midst of the cases. Additional validation of the ESBM method in cases (nearly) similar to Company C would increase the opportunity to extrapolate the findings of this research.

8.4. Future work

The sections on contribution and validity of this research have shown that future work can further increase the added value of this research. The contribution has shown that the ESBM method, most likely is suited for each substantial project for which a business case needs to be build. Additional research is required to verify whether replacing two viewpoints (ES expert, ES-maintenance expert) will make the ESBM suited for a broader range of projects than ES experts.

The validity section of the research provided aspect to consider when further validating the ESBM method:

- Track the benefits of the implementations at Company A, B and C
- Deploying the ESBM method at large projects, size over € 50 million
- A case study in which the benefits will be tracked and monitored during and after the project
- Deploy the ESBM method in a project similar to Company C's
 - A new ES system
 - A global project
 - A multiple million budget

Based on the findings in the three cases, several improvements to the method have been proposed in section 7.4. Five of the improvements of the ESBM method were partially validated during deployment:

- Lengthening workshop 2 (Company B)
- Shortening the matching benefits with goals activity (Company B)
- Consolidate the findings of matching benefits with goals by the facilitator (Company B)
- Increasing the interdependence between the benefits activity (Company A, Company B)
- Adding an intermediate discussion of the benefits (Company B)

The remaining improvements have not yet been validated:

- Adding a C-level workshop to identify high level benefits
- Adding a benefit definition activity before entering the benefits in the template
- Lengthening workshop 1
- Adding a virtual place where participants can work on the benefits between the two workshops

Although we are certain that the improvements will increase the added value of using the ESBM method, future research will have to validate the effects of the improvements. Future work is also required to create and validate an online ESBM method tool. Realizing this tool would most likely increase the deployability even further.

Lastly, the analysis of the outcome (7.2.2) provides an interesting insight in the findings: the more knowledge present at the organization on the project (A), and the smaller the project (B), the higher the quality of the work (D). However, the outcome and process at Company B have shown that this relationship is not fixed. By increasing the amount of time spent by the participants (C), Company B was capable of increasing the knowledge of their (medium size) project, thereby increasing the specificity of the benefits. This provides four factors:

- Knowledge of the project
- Size of the project
- Time investment
- Specificity of the benefits

The outcome seen in the cases leads us to believe that:

- For a constant A, an increase of B requires an increase of C (see Figure 21 for an illustration)
- D is an asymptotic function of A (see Figure 22 for an illustration). The specificity of the benefits can increase greatly when increasing the knowledge on the project, but only up till a certain limit.

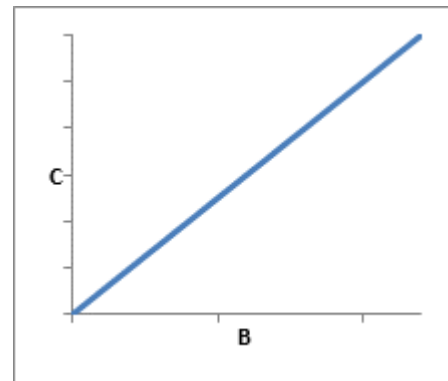


Figure 21 For an equal A, C will have to increase when B increases

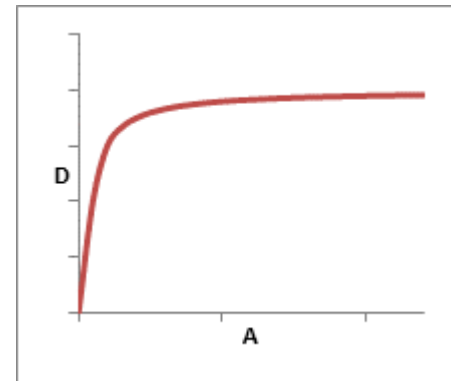


Figure 22 The dependency of D on A

Future research will have to dive deeper into the relation between these four factors.

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Appendix A: Interviews on method deployment

This chapter contains more information about the interviews with business experts at KPMG on how to deploy the method. This chapter should provide the reader with insights on how the information was acquired and used for the research. To do so, the goals, methodology, approach, questions, interviewees and findings will be described.

Interview goals

The goal of the interview was:

- Verify contents of the method
- Determine possible ways to deploy the benefits method
- Determine essential features for method deployment
- Determine deal breakers for method deployment
- Find tools and templates for method deployment
- Find projects where the method could be validated

Interview methodology

The interviews were conducted in a period from May 13th till May 26th 2011. The interviewees were sent a short presentation and the full description of the method, to provide them with an option to prepare the interview. The duration of the interviews was approximately one hour. Except for one interview (Sander van der Meijs, telephone), all interviews were held face to face. Notes were being taken during the interview to make sure presented information was documented. Constructing the findings was based on the interview notes and discussions with the supervisors. The constructed deployment of the method was sent to all interviewees to validate the findings.

Interview approach

For each interview the same approach was used:

- Get to know each other
- Explain goal of the interview and research
- Explain goal of the method
- Short discussion of the method
- Ask questions
- Conclude session, explain the future process, ask if they want to be kept in the loop

Interview questions

- What is your (first) impression of the benefits method?
- What ways do you see to deploy the method?
- How would you deploy the method?
- What could be points of awareness during deployment?
- What tools and templates would be useful for the deployment of the method?

Interviewees

- Arjan Vreeke
- Hein van Bon
- Sander van der Meijs

- Peter Schuurman
- Koen Delaure
- Rob Peters
- Ludvig Daae
- Joost Groosman
- Thomas Broekhuizen
- Mark Scheurwater

Appendix B: benefit determination for ES implementation business cases

Preparing business cases for ES implementations is seen as common practice. However, determining the benefits seems to be a difficult part of preparing the business case. To help determining the benefits of a business case (from a technology driven perspective), we constructed a method that guides the benefit determination process. This method will only consider the benefits of implementing an ES that are identified during the business case development process, the cost should be included in the cost calculation of the business case and are therefore out of focus of this method. The method will not provide guidelines that can be used to identify the reasons and goals behind a project. These reasons and goals are considered as given and will only be used to make the benefits more clear. In this paper we will describe a method for determining the benefits for a business case of an ES implementation. We will first give a short overview of each step in the process, including a description of the goal of each step. Afterwards we will describe how the method can be used in each step. To make the method more understandable, we will show in Figure 1 an application of the method in an exemplary case of an ES implementation in an airline company. Detailed information on each step of the method can be found in the section ES Benefits management method on page 83.

Usage of the method

The method is prepared for enterprise system (ES) implementations. There are a number of characteristics that make ES implementations distinct:

- High complexity
- Core process involvement
- Cross functional integration of business processes
- Enterprise wide database

The method is built to suit these specific characteristics, although the setting in which it can be used is of more importance. The goal of the method is to start and enhance the discussion about achieving benefits by implementing an ES. The method is flexible in its appliance, it can be used when requested and provides the user with the help he needs. Probably the best way to use this method is creating a workshop setting in which this method can be used to structure the brainstorming process. In this workshop, people from different disciplines within the organization, people who have the authority and the power to initiate changes in the organization and people who work closely on the process should participate (as they are subject matter experts). It could be that the method provides too much or too detailed information. The user of the method should be aware of this when high leveled information is required or the outcomes are shown to indirectly involved people. Further/ detailed guidance on setting up such workshop settings will be provided by follow up research of this project.

Steps in the process

The process has four main steps:

1. Identify organizational goals, critical success factors and key performance indicators for the project.
The goal of this step is to make sure that everyone is thinking in the same direction. The goals (which are assumed to be given) serve as an input in discussing how to achieve the goals and critical success factors, by what means and with which solution, thereby trying to create consensus amongst the participants.
2. Use the benefit determination framework.
The goal of this step is to start a discussion on what benefits can/will be achieved and by what means. Going through each step of the method will help creating a discussion and will thereby make the benefits more clear and precise. It will further ensure that the participants identify all applicable benefits and not just the ones that come first to their minds.
3. Connect to benefits found in step 2 to the goals found in step 1, to make sure that the project is meeting its goals.
The goal of this step is to make sure that the benefits match with the initial goals of the business case. By trying to connect the benefits to the goals it becomes clear whether each goal can and will be achieved and by what means (benefits).
4. Determine the interrelatedness between the benefits.
The goal of this step is to make sure that there are not benefits in the business case which exclude each other. This step is also beneficial for determining the importance of the benefits and assigning a sequence in achieving the benefits.

How to use the method

- 1) Depending on the drivers of the project the following items should be specified:
 - a) In the case of a problem driven (bottom up) projects, a problem identification should be formulated, which is to be solved by this project
 - b) In the case of a strategic driven (top-down) project, the organization vision and mission should be specified.
 - c) For both kind of projects the project goals (try to express these as a KPIs) should be formulated. Project goals are probably already stated in the document provided by the project owners
- 2) Benefit identification process
 - a) Find the benefits which originate from the project and list them. (A list with possible benefits areas is provided in step 2a of the method (see page 83).
 - b) For each of the stated benefits, fill in the benefit template, starting on the left, finishing on the right.

Benefit	Benefit owner	Classification of change	Required business changes	Measurement of effect	Time span	Probability
		Do new things (grow the business, transform the business):	Process level:	↑ Financial: Quantifiable: Measureable: Observable:		
			People level:			
	Subject matter expert	Do things better, cheaper or faster:	Organization level:			Frequency
		Stop doing things:	Technology level:			

- 3) Connect the benefit to the goals. Place the benefits found on the left, the goals on the right, and connect these.
- 4) Determine the dependence between the benefits by drawing a connection between related benefits and assigning the amount of coupling. For each negative dependency, the most favorable for the goals (step 1) will be chosen.

Example of steps 2,3 and 4

Dependence	Benefits						Goals
	Benefit	Benefit owner	Classification of change	Required business changes	Measurement of effect	Time span	Probability
+1	Increased own airplane maintenance capacity	Chief Operations Officer	Do new things (grow the business, transform the business):	Process level: Change of maintenance process	↑ Financial: m€ 30 Quantifiable: ✓ Measureable: ✓ Observable: ✓	Year 1: 0% Year 2: 25% Year 3: 50% Year 4: 75% Year 5: 100%	90%
		Subject matter expert	Do things better, cheaper or faster:	People level: Intensify Workload			Frequency
		Maintenance engineers	Improve maintenance planning, change maintenance priorities	Organization level: Increase connection between maintenance & operations division			1
			Stop doing things:	Technology level: planning system, inventory management system			
-2	Increased 3rd party airplane maintenance capacity	Chief Executive Officer	Do new things (grow the business, transform the business):	Process level: Change of maintenance process	↑ Financial: m€ 30 Quantifiable: ✓ Measureable: ✓ Observable: ✓	Year 1: 0% Year 2: 25% Year 3: 50% Year 4: 75% Year 5: 100%	90%
		Subject matter expert	Do things better, cheaper or faster:	People level: Intensify Workload			Frequency
		Maintenance engineers	Improve maintenance planning, change maintenance priorities	Organization level: Increase 3rd party section capacity, decrease own airplane section capacity			1
			Stop doing things:	Technology level: planning system, inventory management system			
+1	Increased maintenance flexibility	Maintenance supervisor	Do new things (grow the business, transform the business):	Process level: Redesign of planning process	↑ Financial: Quantifiable: Measureable: Observable: ✓	5 years 4	100%
		Subject matter expert	Do things better, cheaper or faster:	People level: Train maintenance planners			Frequency
		Maintenance planner	Change planning process	Organization level:			350
			Stop doing things:	Technology level: Use planning software			

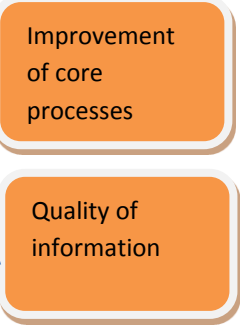


Figure 23 Example of the benefit method

In this example a choice will have to be made between increased own airplane maintenance capacity and increased 3rd party airplane maintenance.

ES Benefits management method

1. Identify organization goals, mission and vision, so that you know what is expected from the project and how the project is able to contribute to the organization. A SWOT analysis might be a useful tool in determining where the project should be heading.

This step shows which issues the organization is facing and how this project can help achieving them. To be able to do this, overall elements (goals, mission and vision) which determine the performance of the organization should first be found, which needs to be agreed upon by all stakeholders. These elements should be made measurable in order to make the outcomes of the project measurable.

- a. If this step cannot be executed, continue to step 2 and return to this step afterwards. *Organizational goals, mission or vision might be too abstract to be of considerable contribution to determine the contribution of the project this early in the benefit determination method. After step 2 the goals of the project are more concrete, which makes it easier to determine how the project can contribute to the organization.*
 - b. If goals are given or provided, it would benefit the business case to check who created the goals and which goal is ultimately to be achieved. *By verifying and validating the goals, the business case (and its benefits) can be focused on achieving results for the organization.*
2. Use benefit framework, for each of the benefits, the steps b through e should be undertaken. *In this step the benefits to be achieved by this project are determined. Therefore, we first look at the possible benefits, assign an owner to the benefits, make them explicit and determine the period in which the benefit is likely to be achieved. The result of this step will be a list with complete description of what the benefit is, who is the owner, how it can be measured and when it can be achieved.*

- a. Determine the benefit

Benefit	Benefit owner	Description of benefit	Assumed business design	Measurement of effect	Time span	Probability
		Do new things (grow the business, transform the business)	Process level:	Qualitative:		
		Do things better, cheaper or faster	People level:	Quantifiable:		
		Do things better, cheaper or faster	Organization level:	Measurable:		
		Do things better, cheaper or faster	Technology level:	Observable:		

- i. Suggested areas to look at for finding benefits:

This is a list of possible areas to look at for finding benefits. To convert this list to project benefits you should look one step deeper (more explicit) than the areas suggested to find the real benefit.

- Operational
 - a. Cost reduction (tangible)
 - b. Cost reduction (intangible)
 - c. Cycle time reduction
 - d. Productivity improvement
 - e. Quality improvement
 - f. Customer service improvement
 - g. Revenue/profit increases
 - h. New/improved processes
- Managerial
 - a. Better resource management
 - b. Improved decision making and planning
 - c. Improved performance

- Strategic
 - a. Support for business growth
 - b. Support for business alliance
 - c. Building business innovations
 - d. Building cost leadership
 - e. Generating product differentiation
 - f. Enables worldwide expansion
 - g. Enables external linkages
 - h. Enables e-commerce
 - i. Generate/sustain competitiveness
 - j. Building business flexibility for current and future changes
 - IT-infrastructure
 - a. IT cost reduction
 - b. Increased IT infrastructure capability
 - c. Increased user friendliness
 - d. Application integration
 - Organizational
 - a. Changing work patterns + improved coordination
 - b. Facilitating organizational learning
 - c. Empowerment
 - d. Building common vision
 - e. Shift work focus to core work
 - f. Increase employee morale and satisfaction
 - g. Standardization
- ii. You could use an Ishikawa diagram to structure the benefit creation process dependent on the industry in which the company is you could use the following):
- Manufacturing
 - a. Methods
 - b. Machinery
 - c. Management
 - d. Material
 - e. Manpower
 - Service
 - a. Surroundings
 - b. Suppliers
 - c. Systems
 - d. Skills
 - Service products
 - a. Product
 - b. Price
 - c. Place
 - d. Promotion
 - e. People
 - f. Process

- g. Physical Evidence
- h. Productivity & Quality

b. Assign an owner (who should be accountable) and subject matter experts (who have the best knowledge of the process) to the benefit.

(It could be that people are not willing to provide the information for specifying the benefits, as this could create negative outcomes for the supplier of the information. This can possibly be mitigated by making information provision anonymous.)

*This step is essential to make the benefits more precise and will help determine steps c and d as the subject matter expert of the benefit normally has the most knowledge on how to achieve and measure it. The owner should be an **accountable** individual who gains the advantage inherent in the stated benefit, so that he is willing to work with the team on the project to achieve the benefit and has the authority to facilitate the required changes.*

Benefit	Business Impact	Business Change	Business Process	Measurement of Benefit	Owner	Subject Matter Expert
		Do New Things (grow the business, transform the business)	Process level:	Quantifiable:		
		Do Things Better, Cheaper or Faster:	Organization level:	Measurable:		
		Stop doing things:	Technology level:	Observable:		

c. Classify the change of the benefit implies, when you find that there are several possibilities, you should further specify the benefit so that it matches to one classification of change.

(It could be that people are not willing to provide the information for determining the type of change, as it can create negative outcomes for the supplier of the information. This can possibly be mitigated by creating making information provision anonymous.)

In step c and d the benefits are made more explicit by placing them in a specific type/category. The need to place the benefits in a type of business change encourages discussing the benefits and helps in making it explicit.

- i. Do new things (grow the business, transform the business)
- ii. Do things better, cheaper or faster
- iii. Stop doing things

Benefit	Business Impact	Business Change	Business Process	Measurement of Benefit	Owner	Subject Matter Expert
		Do New Things (grow the business, transform the business)	Process level:	Quantifiable:		
		Do Things Better, Cheaper or Faster:	Organization level:	Measurable:		
		Stop doing things:	Technology level:	Observable:		

d. Determine the required business changes to achieve the benefit. The cost estimates found while analyzing the required business changes can be included here, but should definitely be included in the cost calculation of the business case.

(For this step, the same holds as for step 2.c.)

This step helps you to identify and further specify the choice you made for the type of business change. By discussing and finding the required business changes, the benefit and how to achieve it becomes more explicit.

Benefit	Business Impact	Business Change	Business Process	Measurement of Benefit	Owner	Subject Matter Expert
		Do New Things (grow the business, transform the business)	Process level:	Quantifiable:		
		Do Things Better, Cheaper or Faster:	Organization level:	Measurable:		
		Stop doing things:	Technology level:	Observable:		

e. Determine the measure to evaluate the benefit, by proceeding in the following list of explicitness, for non-quantifiable benefits, it will not be possible to go up to the highest levels. When having difficulties on quantifying see step 2.e.v, for examples see step 2.e.vi).

Determining the outcomes of the benefit and making them more measurable will help making the benefit more explicit and clear.

- i. Observable, assign e.g. a 1 if it's observable or a 0 if it's not observable.
By use of agreed criteria, specific individuals/groups will decide, based upon their experience or judgment, to what extent the benefit has been realized.
- ii. Measurable, assign a rating e.g. from 1(low) to 5 (high) describing how much the benefit is going to change.
This aspect of the benefit is currently being measured or an appropriate measure could be implemented. But it is not possible to estimate by how much performance will improve when changes are completed.
- iii. Quantifiable.
Sufficient evidence exists to forecast how much improvement/benefit should result from the changes.
- iv. Financial.
Once the quantifiable effect is determined, financial numbers should be added to calculate the economic value of the benefit

Benefit	Measurement	Quantification	Financial	Value
Do new things (grow the business, transform the business)	Process level:	Quantifiable:	Measurable:	Observable:
Do things better, cheaper or faster:	People level:	Measurable:	Quantifiable:	Observable:
Stop doing things:	Organization level:	Observable:	Measurable:	Quantifiable:
	Technology level:	Observable:	Measurable:	Quantifiable:

- v. When having difficulties in quantifying, the following actions can be performed to find data:
 - Perform a pilot
 - Use reference sites
 - Use external benchmarking
 - Modeling or simulation
 - Try to find/use detailed evidence (internal) for assumptions
- vi. Examples on how to move up in the measurement of effect scale:
 - Improved flight utilization (financial)
 - a. Observable: more flights can be executed, which can be observed → 1
 - b. Measurable: we can measure that the number a flights a year will increase by a lot → 5
 - c. Quantifiable: at a competitor an increase of the maintenance planning on the same scale resulted in an 10% increase of flights
 - d. Financial: 10% increase of the flight utilization results in revenues going up by m€ 60, costs going up by m€ 30, resulting in an extra net profit of m€ 30
 - Productivity improvement of airplane service engineers (quantifiable)
 - a. Observable: the standby time of service engineers reduces when using a planning system, which can be observed → 1
 - b. Measurable: we can measure that the productivity of the service engineers will moderately increase → 3

- c. Quantifiable: industry best practices indicate that by implementing a planning system we can achieve a 30% reduction of standby time of the service engineers
 - Better resource management by using an inventory management system (measurable)
 - a. Observable: the inventory level will be reduce, which can be observed → 1
 - b. Measurable: we can measure a relatively large decrease of items in inventory → 4
- f. Determine the time span of achieving the benefit

By making the time span explicit, it is known when the benefit is likely to occur. This makes the benefits, and therefore the business case, more explicit and realistic. The time span is also useful in determining the moment to measure goal achievements.

Benefit	Investment Objective	Investment Objective	Investment Objective	Investment Objective	Investment Objective
Do new things (grow the business, transform the business)	Process level:	Quantifiable:	Observable:	Measurable:	Observable:
Do things better, cheaper or faster	People level:	Quantifiable:	Observable:	Measurable:	Observable:
Stop doing things:	Organization level:	Quantifiable:	Observable:	Measurable:	Observable:
	Technology level:	Quantifiable:	Observable:	Measurable:	Observable:

- i. When scheduling a big bang implementation the time span will start at the go live moment. When scheduling an incremental implementation the time span should start at the project start date.
- g. Determine the probability of achieving the benefit (in percentages). The probability is the chance of achieving the effects stated for each benefit.

By making the probability of the benefit explicit, it will easier to compare different benefits. Furthermore it will help building a realistic business case by showing in which range the results of the business case can be found. (Analyzing this range is out of scope for this method but should be considered when building a complete business case)

Benefit	Investment Objective	Investment Objective	Investment Objective	Investment Objective	Investment Objective
Do new things (grow the business, transform the business)	Process level:	Quantifiable:	Observable:	Measurable:	Observable:
Do things better, cheaper or faster	People level:	Quantifiable:	Observable:	Measurable:	Observable:
Stop doing things:	Organization level:	Quantifiable:	Observable:	Measurable:	Observable:
	Technology level:	Quantifiable:	Observable:	Measurable:	Observable:

- h. Determine the frequency of achieving the effects of the benefit

By determining the frequency at which the benefit occurs, it will be easier to compare different benefits and it will help determining a realistic size of the effects.

 - i. Is the benefit realized once (E.g. Selling a department)
 - ii. Is it a periodically reoccurring benefit (E.g. Earning a profit once a quarter)
 - iii. Is it a event based reoccurring benefit (E.g. k€ 10 saved at each plane take-off)

Benefit	Investment Objective	Investment Objective	Investment Objective	Investment Objective	Investment Objective
Do new things (grow the business, transform the business)	Process level:	Quantifiable:	Observable:	Measurable:	Observable:
Do things better, cheaper or faster	People level:	Quantifiable:	Observable:	Measurable:	Observable:
Stop doing things:	Organization level:	Quantifiable:	Observable:	Measurable:	Observable:
	Technology level:	Quantifiable:	Observable:	Measurable:	Observable:

3. Structure the benefits and goals by aligning them next to each other. This will make sure that the benefits of the project correspond to the drivers of the project (see step 1).

This step is used to explicitly link the investment objectives and required benefits so that it becomes clear whether the project is going to reach its goals and by what means (benefits).

 - a. Place the benefits, found in step 2, in the left box
 - b. Place the drivers of the project (investment objectives), found in step 1, in the right box
 - c. Connect the benefits to the goals (by drawing lines)

- d. Check whether each goal is connected to a benefit, if there are goals without connections, try to look for benefits which can help achieving this goal. If this cannot be done, check whether the goal is reachable by this project. The benefits that are not connected to one of the goals, can be seen as additional benefits.
4. Check the relations between the benefits

This step is used to check the interrelatedness of the different benefits. Both benefits that support and exclude each other need to be clear to make sure that all benefits stated, actually can be achieved (within the same business case). Checking the relations between the benefits is also beneficial in resolving conflicts between stakeholders early in the process.

 - a. Make a list of the benefits found in the previous steps
 - b. Connect the benefits that are dependent
 - c. Assign the direction(s) of the relationship, indicating which benefit influences the other
 - d. Assign a relation to the connection
 - i. Positive (A supports B) → +
 - ii. Negative (A excludes B) → -
 - e. Assign a rating to the connection
 - i. Loose coupling → 1
 - ii. Tight coupling → 2
 - f. List the benefits which have a negative connection
 - g. Determine which benefit should be left out. Factors to take into consideration:
 - i. CSF's (from step 1)
 - ii. Increasing KPI's (from step 1)
 - iii. Goals (from step 1)
 - iv. Probability (from step 2.f.i)
 - v. Frequency (from step 2.f.i)
 - vi. Related benefits (which can only be achieved, if this benefit is chosen and to which extend)
 - vii. Measurement of the effect (from step 2.e)

Appendix C: Benefits management questionnaire

Benefits management questionnaire

Name: _____

Role in the project: _____

Please indicate, on a 7-points scale, the extent to which you agree with the following statements.

1. I do not know how to create a business case

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

2. I know what benefits management methods are and what they can do

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

3. I expect benefits will not be more relevant, when using the ES benefits management method

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

4. I think that overall project results will be better when managing benefits

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

5. I expect benefits management to take a significant amount of my time

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

6. I expect benefits will be more specific, using the ES benefits management method

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

7. I think that the value of benefits management is greatly overrated

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

8. I think that by deploying benefits management, I will not be able to make better decisions about a project

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

9. I do not expect to find additional benefits, when using the ES benefits management method

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

10. In general, I think benefits are exaggerated when making the business case

completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*

11. I use benefits to guide my projects and/or daily operations
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
12. I expect benefits will be more feasible, when using the ES benefits management method
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
13. The amount of time spent on using the benefits management method is well spent
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
14. I expect benefits management to make the added value of investments more transparent
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
15. I am committed to the business case for this project
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
16. I expect the benefits to be exaggerated, when using the ES benefits management method
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
17. I know how to read and interpret a business case
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
18. I think the ES benefits management method should not be used for future business cases
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
19. I think the workshop is suited to work with the ES benefits management method
completely disagree 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 *completely agree*
20. What other forms (e.g. workshop) would you suggest to work with the ES benefits management method?

21. I think the minimum threshold of the project budget to be viable with the method is

22. What is the amount of hours you have spent until now on working with/on the ES benefits management method?

Questions 19, 20 and 22 were only used in the questionnaires after the workshops

Appendix D: Analysis of the validation results

The next five sections will show the results per item of validation. For each item we will also review the differences between the cases and the moment at which the questionnaire were submitted (at the interview, after workshop 1 or after workshop 2). Only distinct differences or trends between the findings will be shown. The full validation results can be found in All results of the questionnaire on page 99.

Evaluation of the “Use of business cases”

The use of business cases is evaluated by two indicators: knowledge of the business case (A) and commitment to the business case (B), which are shown in Figure 24. Looking at the commitment (B in Figure 24), we can see that overall commitment to the projects is moderately high. The commitment to the business case of the project rises slightly while working with the ESBM method, as Figure 25 shows. In relation to both other cases, the commitment to the business case of the projects is rated higher at Company B (B in Figure 26).

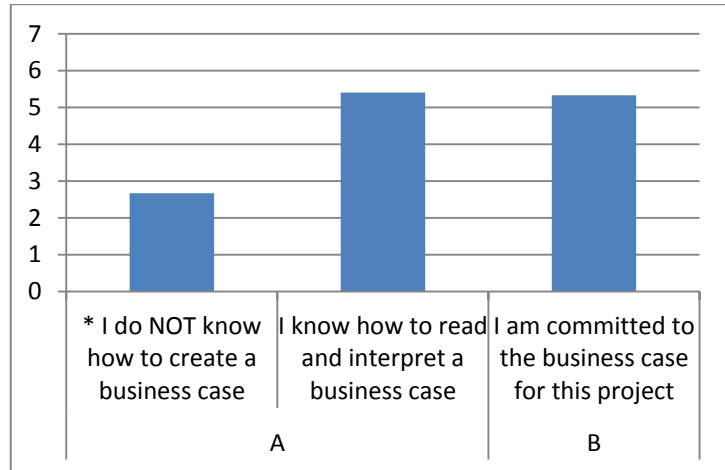


Figure 24 Overall results of "Use of business cases"

The participants assign themselves a high understanding of creating, reading and interpreting a business case (A in Figure 24). Comparing these results between the cases shows that Company C has less knowledge and skills on working with business cases than the other cases (A in Figure 26). This might be explained by the higher amount of IT-related participants in the workshops at Company C, compared to the other two cases.

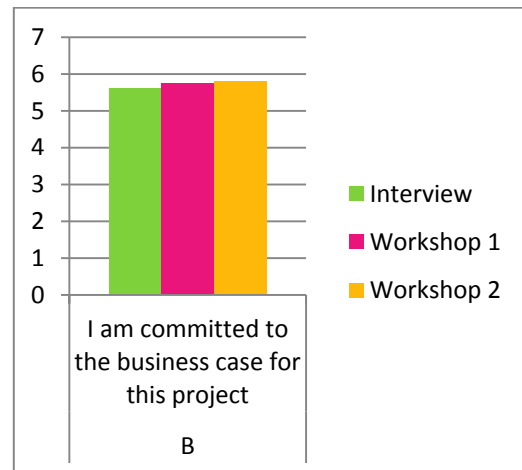


Figure 25 Change of business case commitment

For the use of business cases (B) we can conclude that participants on all cases possess a sufficient amount of knowledge and skills to work with business cases. Referring to the commitment, the results show a high commitment to the business case, while working with the ESBM method increases the commitment to the business case even further.

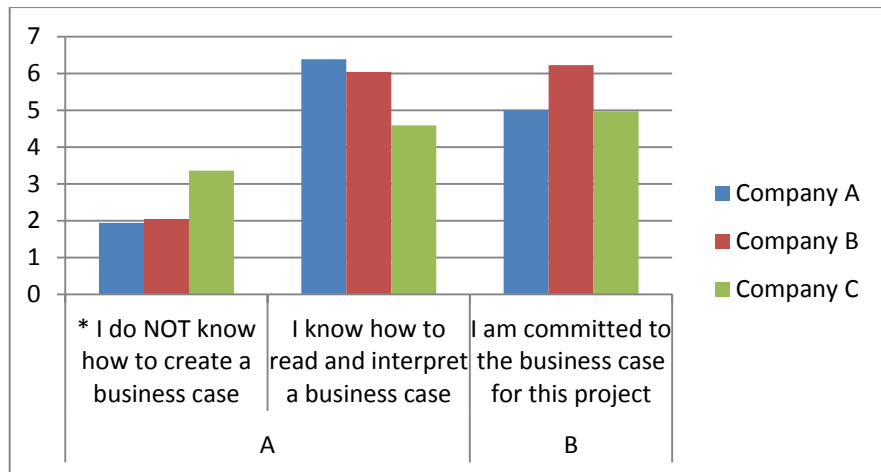


Figure 26 Differences between cases on "Use of business cases"

Evaluation of the "Maturity of benefits management"

The maturity of benefits management is evaluated on three indicators: the knowledge of benefits management (C), the value of benefits management (D) and the usage of benefits management (E).

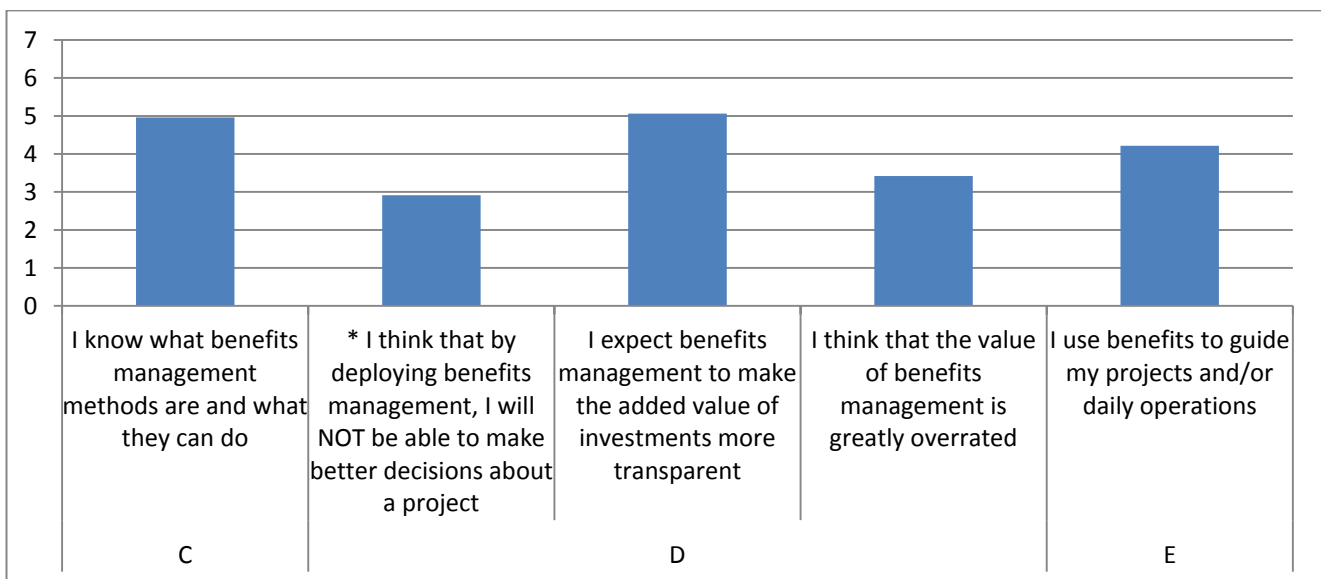


Figure 27 Overall results on "Maturity of benefits management"

Starting at the first, the overall results show that the participants know what benefits management is (C in Figure 27). However looking at their knowledge level of benefits management there is a significant increase of their knowledge between the three questionnaires (C in Figure 28). Working with ESBM method has increased their knowledge of benefits management.

Looking at the usage of benefits management (E in Figure 27) we see a neutral opinion of the participants, only Company B stands out with a moderately high usage of benefits management (E in Figure 29). What also catches the eye is the negative correlation between change on the knowledge of benefits management and the usage of benefits (respectively C versus E in Figure 28). The most likely explanation for this correlation would be that

increasing the knowledge on benefits management has made participants realize they actually do not use benefits management in their current activities.

The last indicator is the value of benefits management (D in Figure 27). The participants recognize the value of benefits management: more transparent added value and better decision making for projects are rated positively. The results also show a slight inclination towards a disagreeing that benefits management is overrated. Looking at the individual results of the cases (Figure 29), we see that Company A and Company C produce relatively similar results. While Company B makes more use of benefits management (E in Figure 29) and attributes a more positive rating towards the value of benefits management (D in Figure 29).

Summarizing the above provides the conclusion on the maturity of benefits management. Benefits management is valued well by the participants, while their use of benefits management is low. Working with the ESBM method has increased their knowledge on what benefits management actually is and a better assessment of their current way of managing benefits.

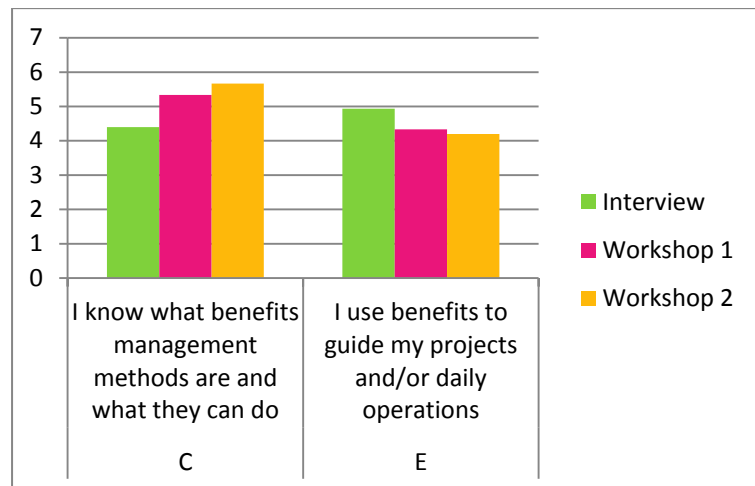


Figure 28 Trends during the deployment process at "Maturity of benefits management"

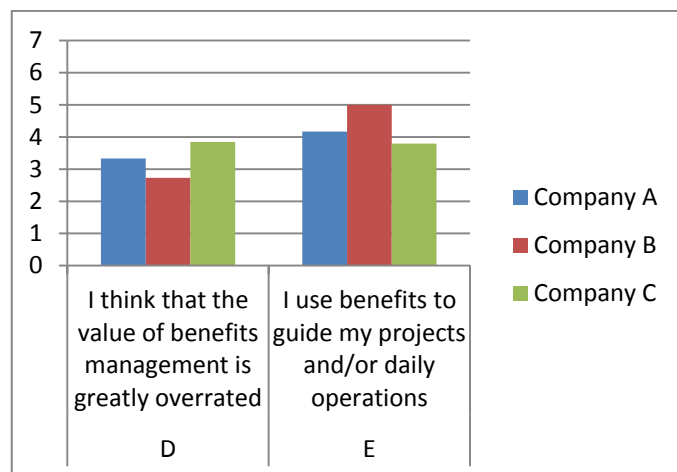


Figure 29 Significant differences between the cases at "Maturity of benefits management"

Evaluation of the “Deployability”

The deployability of the ESBM method is evaluated on three indicators: future use of the ESBM method (F), the size required for using the ESBM method (G) and the suitability of the workshop (H). Given the goal of this research, the future use of the ESBM method is the most important indicator of the deployability. The overall results show that the participants would use the ESBM method (F in Figure 30), although the results change during the process (F in Figure 31). The willingness to use the ESBM method decreases after workshop 1 to return back to its original level after workshop 2. Comparing this finding with the results achieved at workshop 1 provides an explanation (see 7.2.1 as well). Workshop 1 does not help the participants to create specific benefits which reduces their grasp of the final result to be achieved. Seeing workshop 2 generating more specific (and better) results, returns the faith of the participants in the ESBM method.

The participants indicate that a workshop is suitable to deploy the ESBM method (see H in Figure 30). However, Company A and Company C rate the suitability of the workshop significantly different (see H in Figure 32). The explanation lies again in the results of the workshop. The benefits specified in the Company A project are more specific and were created more smoothly than the benefits at Company C and their creation process (the same holds when comparing Company B and Company C). The suitability of the workshop for deploying the ESBM method was confirmed by the results of asking participants which other forms were suited for deploying the ESBM method (belongs to indicator H). Most noted answer was: The workshop (is fine). Others provided input suggestions for the workshop: explanation of system possibilities by expert, additional time to specify terms entered in benefit aspects, additional quantitative research on the benefits found and further development of the business case and specifications found. 4 out of 32 participants indicated additional forms to deploy the ESBM method: brainstorm sessions, a digital

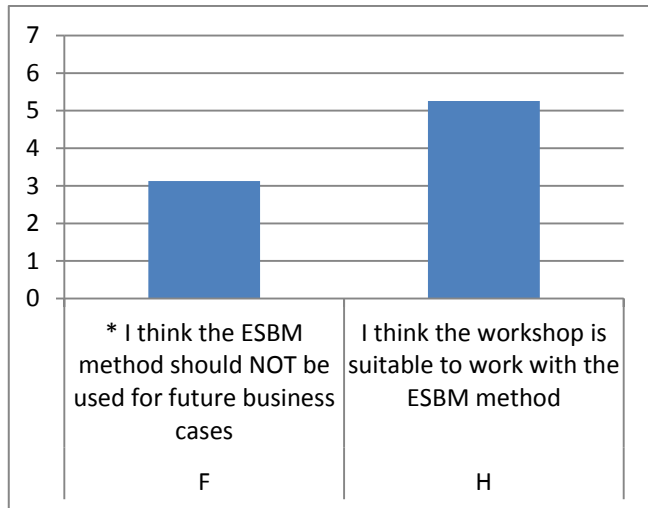


Figure 30 Overall results of "Deployability"

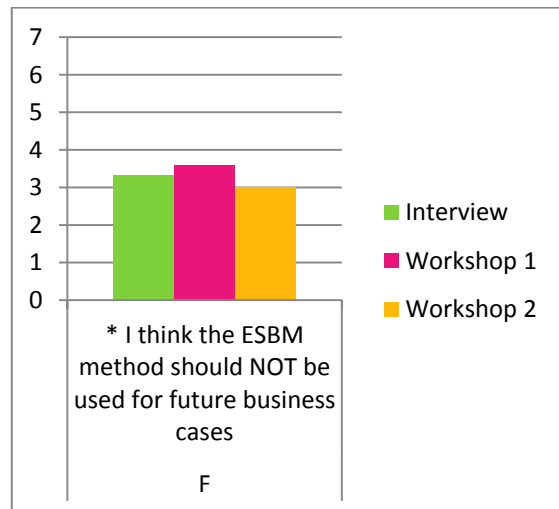


Figure 31 Significant changes during the deployment process at "Deployability"

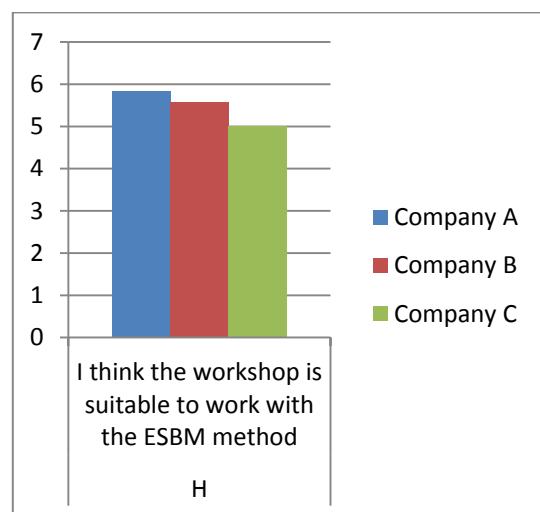


Figure 32 Significant differences between the cases on "Deployability"

(online) form with voting sessions, individual usage and an online questionnaire. Based on the workshop suitability results and the fact that only three participants provided a suggestion, we can state the workshop is the most suitable form for the ESBM method.

The participants were having a hard time to indicate the size a project should have before using the ESBM method becomes beneficial (indicator G), only 19 distinct participants (out of 32) were able to provide an indication. Figure 33 provides the average size a project should be before using the

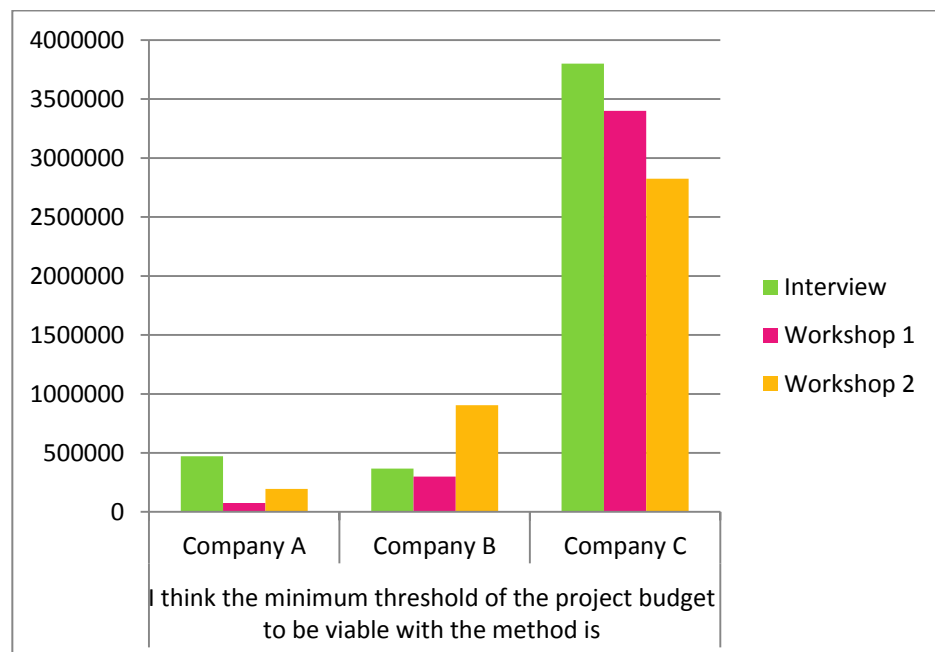


Figure 33 Minimum project size to be viable with the ESBM method

ESBM method, per case, per questionnaire. The graph provides two findings. First, the average indication at Company C differs a factor ten from Company A and a factor seven from Company B². This can possibly be explained by the high number of participants (more than double of the other cases) at the workshops for Company C and the high size of the project used at Company C. The second finding is that during the deployment process the required size decreases after workshop 1 and increases after workshop 2 (except for Company C). This can be explained by looking at the outcome of the workshops, before entering workshop 1 participants believe finding benefits is a hard task. During workshop 1, the participants see a large amount of benefits, that increases the added value of the ESBM method. After workshop 2 the participants see that there is still work left, even after the complete deployment method. This explains the raise in required budget for the project. The actual average required size per case is:

- Company A: €280.000
- Company B: €500.000
- Company C: € 3.330.000

The results indicate a good deployability of the ESBM method. The workshop is suited to deploy the ESBM method. One can start thinking on deploying the ESBM method at project sizes starting around €500.000. Most importantly, for all cases, the participants would use the ESBM method for future business cases.

² A look at the raw data of the questionnaire tells that one participant at Company C entered € 10.000.000 for each questionnaire (3 times in total). Correcting the results for this finding provides an average for Company C of €840.000 which differs only a factor three from company A and a factor two from company C.

Evaluation of the “Quality of the outcome”

The quality of the outcome is evaluated on five indicators: additional benefits (I), more specific benefits (J), increased feasibility of the benefits (K), more relevant benefits (L) and benefits become easier to handle (M).

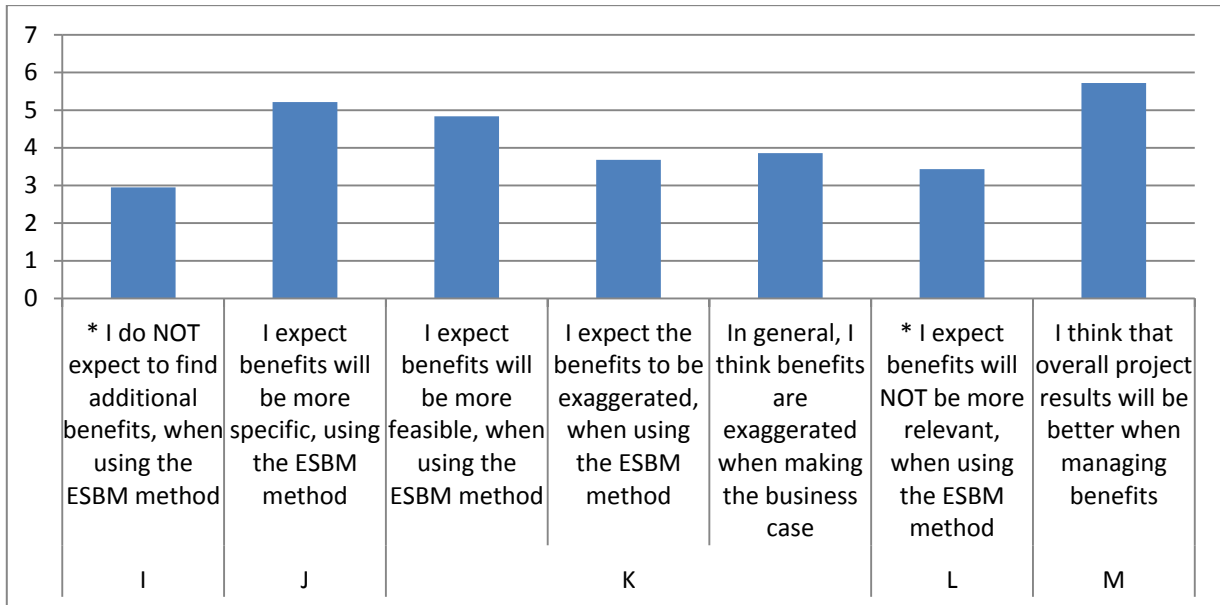


Figure 34 Overall results of "Quality of the outcome"

The overall results (see Figure 35) show that benefits become: more feasible (K), more specific (J), more relevant (L), easier to manage (M) and also that additional benefits are found (I). That shows the ESBM method is capable of achieving its goal to create more specific and feasible benefits.

While working with the ESBM method the participants indicated a decrease of relevancy after workshop 1 (L in Figure 35). This originates from the focus of workshop 1. During workshop 1 the participants focus at finding benefits, while making them specific and relevant is planned in the 2nd workshop (and in the time between). The increase of relevancy after the 2nd workshop supports this line of reasoning. Furthermore, the participants indicate a decrease of exaggerating benefits when not using the ESBM method (K in Figure 35), which is most likely caused by seeing the results produced with the ESBM method.

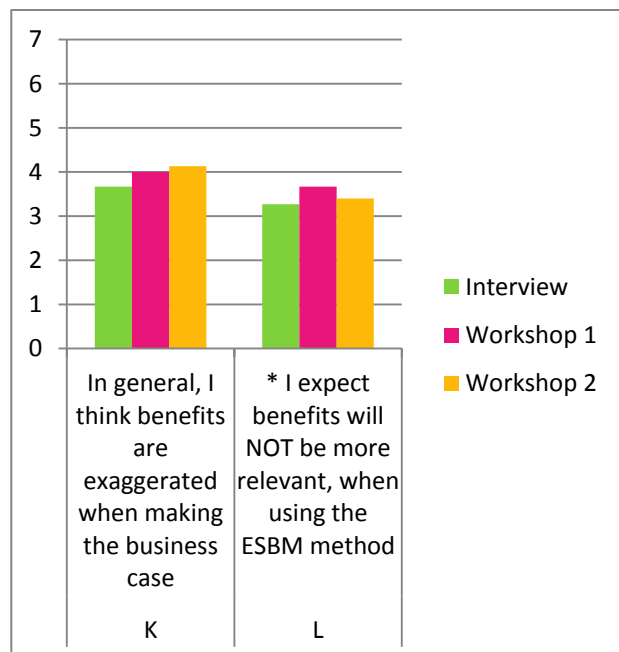


Figure 35 Significant changes and trends during the deployment process at "Quality of the outcome"

Looking at the differences between the cases (see Figure 36), we see that Company B indicates a decline in exaggeration of the benefits when the ESBM method will be used (both red bars at K in Figure 36). Both other cases indicate a slight rise for using the ESBM method. For the specificity we see a significant difference between Company A

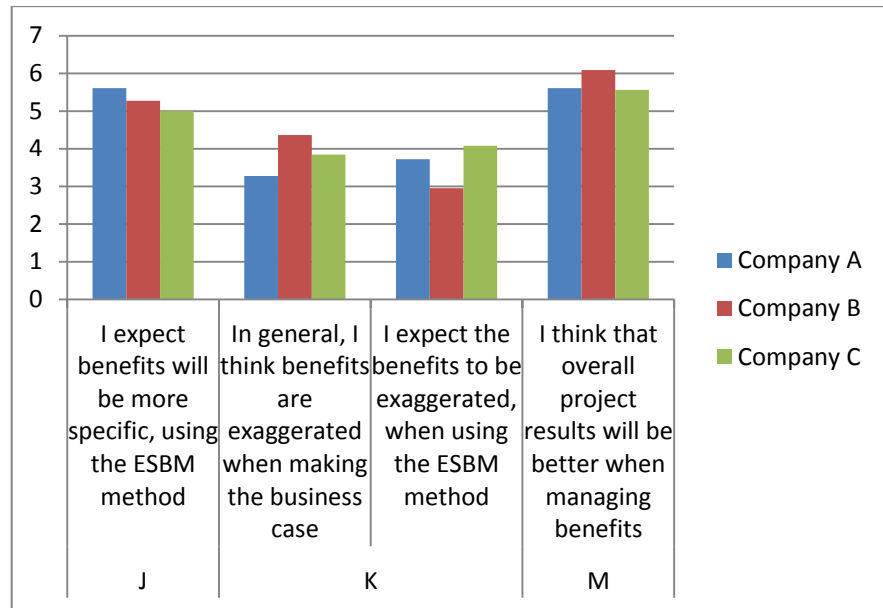


Figure 36 Significant differences between the cases at "Quality of the outcome"

and Company C (J in Figure 36). This can be explained by looking at the results from both cases, the Company A results are more specific and easier reached than Company C's. The difference in results is mainly caused by the scope of the projects involved and the amount of "business" participants (see 7.2.2 and 7.2.3 for a more detailed explanation). Lastly, the participants at Company B rate the increased project results when managing benefits (M in Figure 37) higher than Company A and C. This can most likely be explained by the higher benefits maturity at Company B.

Reviewing the results above we can state that deploying the ESBM method improves the quality of the benefits for an ES business case. The ESBM method helps making the benefits more specific, feasible and relevant. Simultaneously, the ESBM method helps to find additional benefits, which help the adopting organization to manage the projects better.

Evaluation of the "Efficacy"

The efficacy of the ESBM method is evaluated on two indicators: amount of time required (N) and time well spent (O), where the amount of time required is split up in a rating (N in Figure 37) and the actual time consumption (Figure 38). The overall results show that using the ESBM method takes a significant amount of time (N in Figure 37), which is on average is 8 hours per participant (Figure 38). The total time consumption for the cases is:

- Company A, 6 participants, 50 hours
- Company B, 8 participants, 65 hours
- Company C, 21 participants, 120 hours

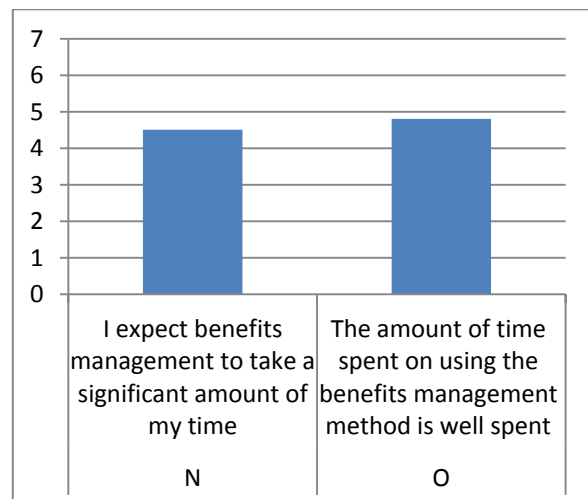


Figure 37 Overall results of "Efficacy"

In Figure 39 the total time consumption per case is shown on two points in time: after workshop 1 and after workshop 2. Both the average time per participant and the total time consumption show an almost equal division of time consumption between workshop 1 and 2.

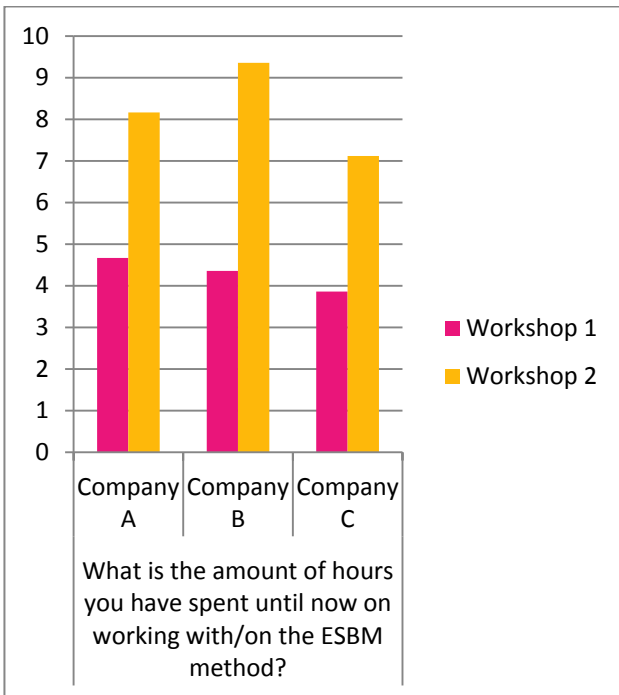


Figure 38 Average time consumption per participant

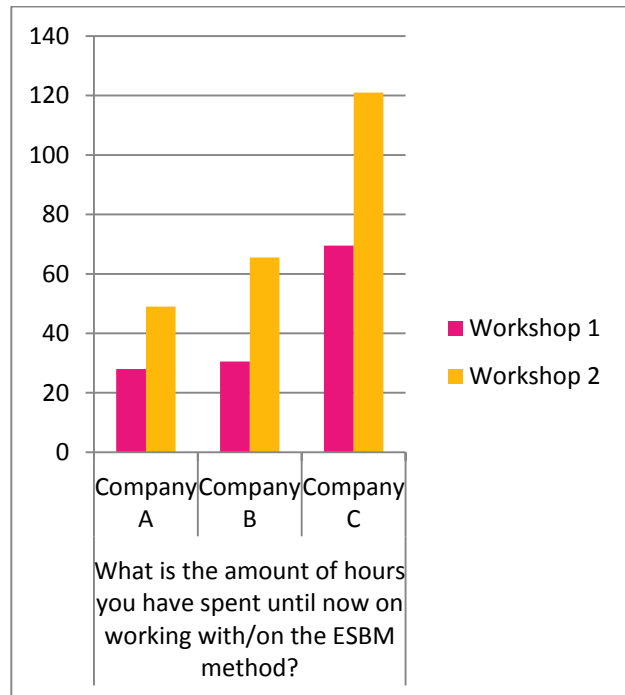


Figure 39 Total time consumption of the ESBM method

The participants indicate an increase in the significant amount of time benefits managements takes while working with the ESBM method, as can be seen at N in Figure 40. This is caused by an improved view on what the ESBM method requires as input to create the results. Even though using the ESBM method takes a significant amount of time, the participants indicate it is time well spent (O in Figure 37).

To conclude the efficacy, we can state that using the ESBM method for an ES business case requires the adopting organization to invest 8 hours per participant at minimum. While this may seem like a significant investment, the participants indicate it is an investment well made.

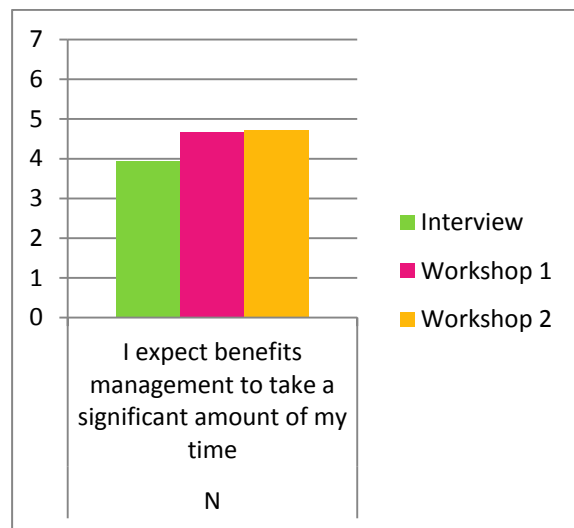


Figure 40 Significant changes and trends during the deployment process at "Efficacy"

All results of the questionnaire

Interview questions can be found in Appendix C: Benefits management questionnaire on page 89.

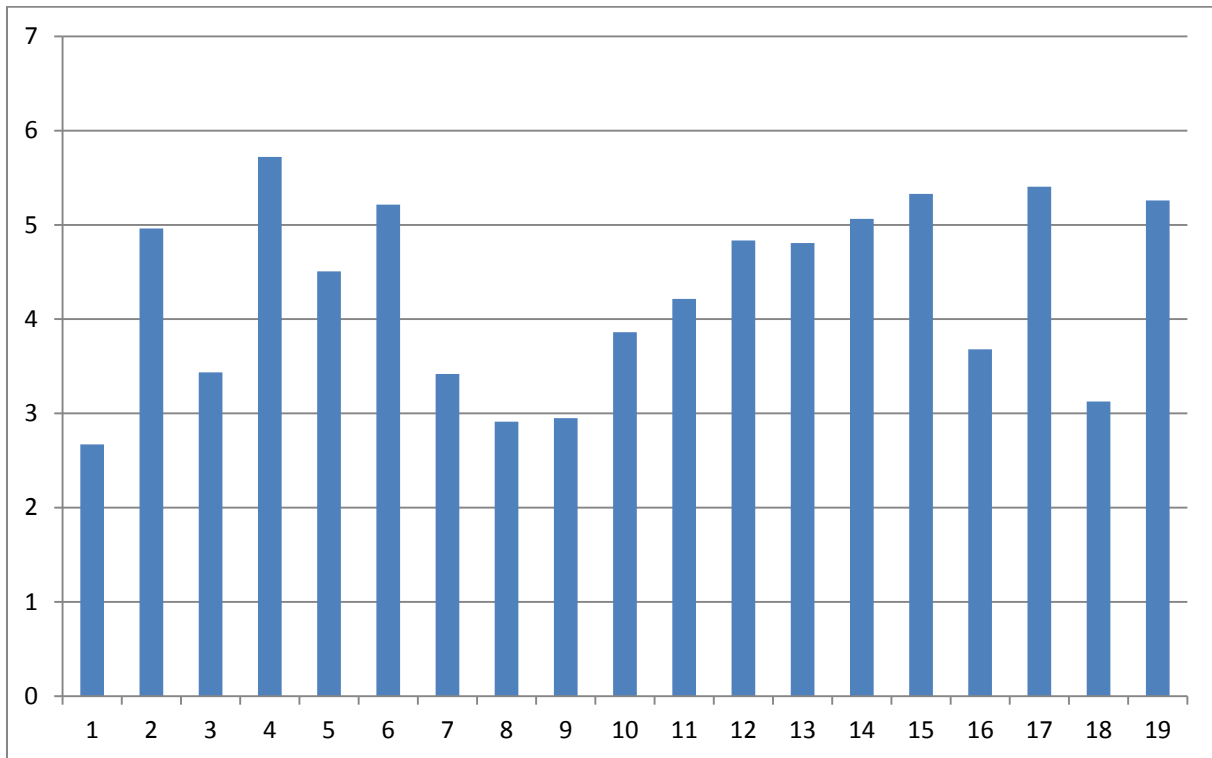


Figure 41 Totals for all results

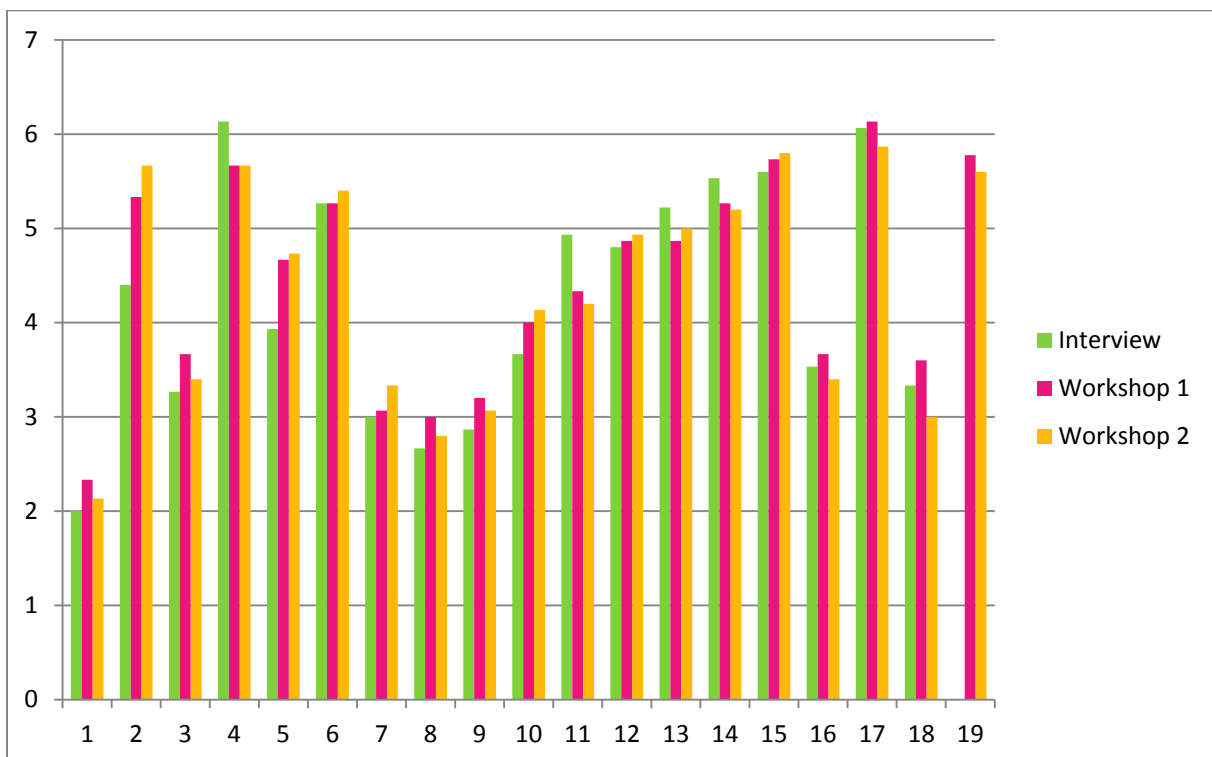


Figure 42 Changes in result during the deployment process

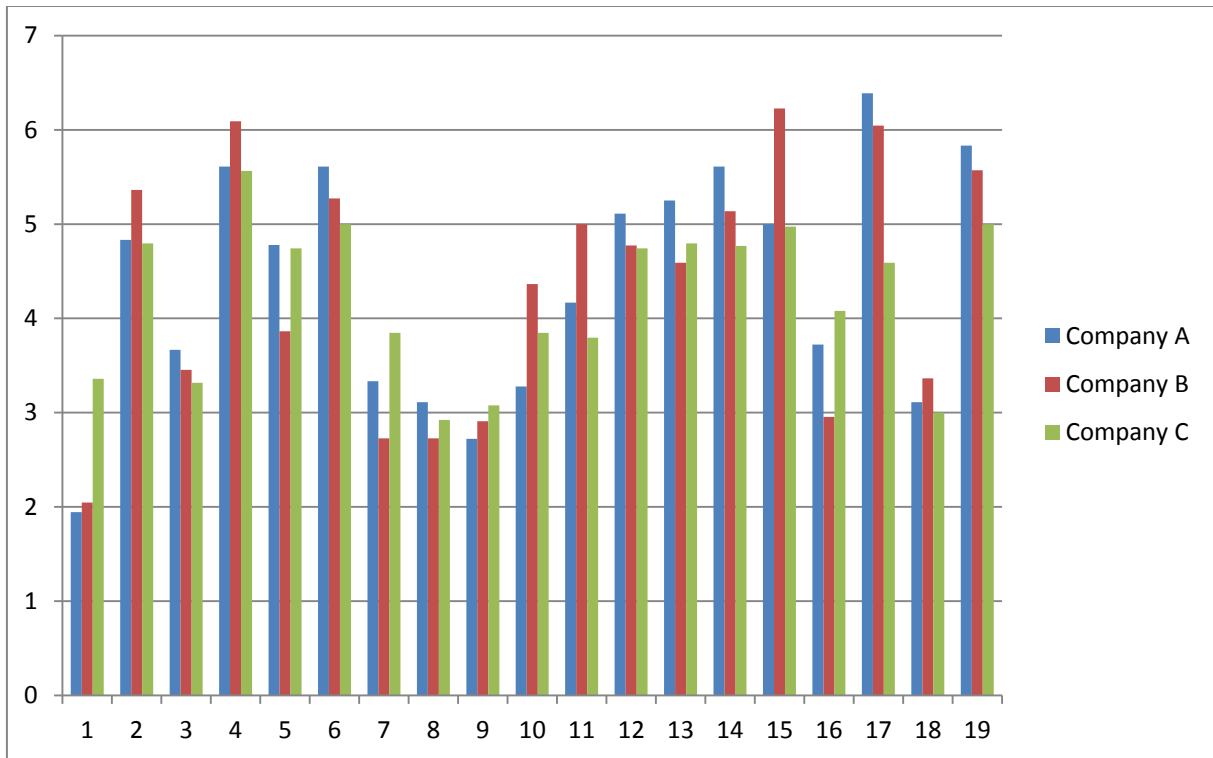


Figure 43 Differences between cases for all results

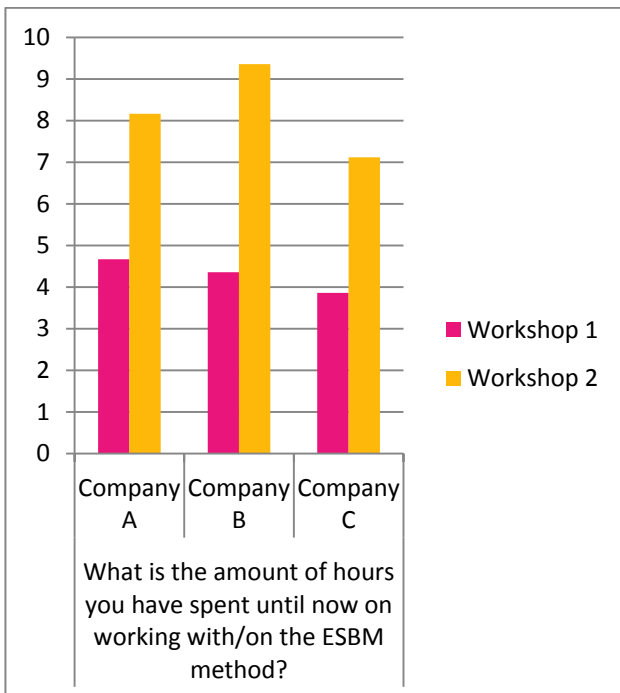


Figure 44 Average time consumption per participant

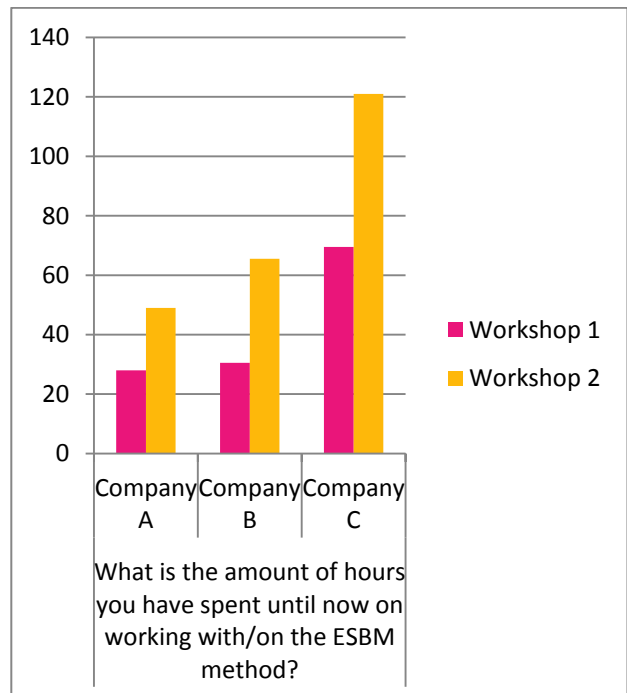


Figure 45 Total time consumption of the ESBM method

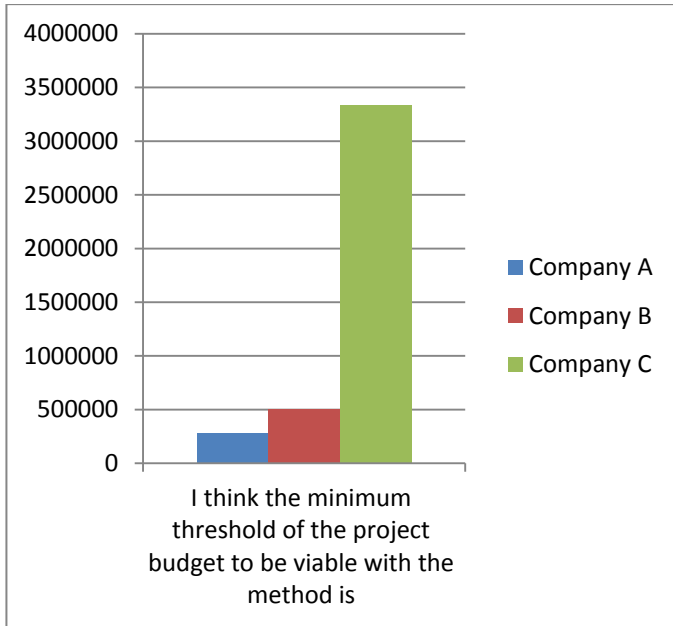


Figure 46 Minimum threshold for deploying the ESBM method

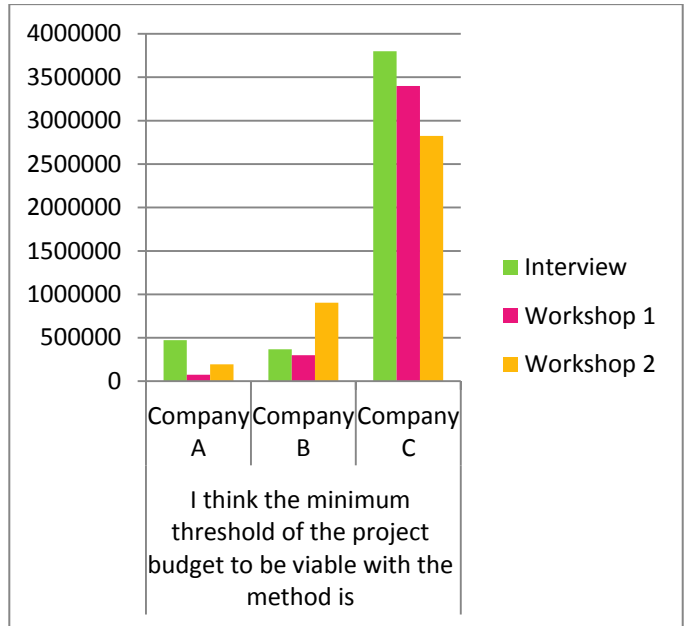


Figure 47 Changes on threshold during deployment