



CENTERIS – International Conference on ENTERprise Information Systems / ProjMAN – International Conference on Project MANagement / HCist – International Conference on Health and Social Care Information Systems and Technologies 2022

Successful IT projects – A multiple case study of benefits management practices

Helene Berg^{a*}, Kjetil Holgeid^b, Magne Jørgensen^c, Gro Holst Volden^d

aNorwegian Defence Research Establishment (FFI), Kjeller, Norway

bDepartment of Informatics, University of Oslo, Oslo, Norway

cSimula Metropolitan Center for Digital Engineering, Lysaker, Norway

dDepartment of Civil and Environmental Engineering, Norwegian University of Science and Technology, Trondheim, Norway

Abstract

Delivering project benefits for users and society is a key aspect of success in public IT projects. The traditional success measures, such as time and cost, only tell parts of the story. Furthermore, one of the main challenges in public IT projects is the inability to produce benefits. The objective of the study is to give evidence-based advice in order to contribute to better benefits management. This objective is achieved through increased knowledge about practices within two central aspects: identification and planning of benefits, and how benefit management is practiced during the execution phase of IT projects. The authors collected information about 23 public IT projects both through interviews with project personnel and by reviewing project documents. These information sources were then analyzed, using mainly qualitative methods. It was found that most projects had some form of a cost-benefit analysis, but the quality and comprehensiveness of the analyses varied. Furthermore, the interview results suggested that the later use of the cost-benefit analysis in benefit management during the project was less important for benefit management, and that the main purpose of the analysis was to ensure approval of the business case. When asked about benefit management practices during the execution phase of the projects, the interviewees' answers were divided almost equally between "important" and "not important." This applied to both the general practice of benefit management and the use of the benefit plan. Personnel with clear responsibility and sufficient authority to realize benefits was one of the most frequently mentioned features that contributed to the realization of benefits. For the later termination phase and evaluation phase, the findings revealed that projects used few resources to evaluate and document realized benefits. In conclusion, the study revealed both awareness and a focus on benefit management practices in the projects represented in the dataset, but also shortcomings. Based on the results, the authors include a set of five practical recommendations for better benefits management.

* Corresponding author. Tel.: +47 95793084; fax: +0-000-000-0000 .
E-mail address: Helene.berg@ffi

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Peer-review under responsibility of the scientific committee of the CENTERIS – International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies 2022

Keywords benefit management, software, IT projects, cost-benefit analysis

1 Introduction

The public sector has and is increasingly investing in software-based products and services. Software development projects face challenges and sometimes even total failures, as shown by findings reported by, for example, Dalal and Chhillar [1], and Goldfinch [2]. Several measures have been suggested to improve the success rate of IT projects, including benefits management (BM). Empirical evidence presented by Holgeid et al. [3] and Jørgensen [4] suggests that BM is a useful tool for increasing the success in the realization of benefits in software projects, which is or should be the main purpose of any IT project. The current body of research in BM is still young, and it is mainly focused on the establishment of a BM practice, and to less extent on how it is executed in practice throughout the lifespan of the project. Braun et al. [5] provide a literature review of research on benefits management in the years 1990–2007, with the main finding that few organizations appear to have processes for benefits management from identification to realization. Similar to Braun et al., Hesselman and Mohan [6] found, in their review of literature published in the years 1990–2013, a low level of adaption of BM processes, and that no research was focused on the implementation of benefits management. Casey et al. [7] conclude that mechanical approaches to the realization of benefits have not been sufficient, and that social and political dimensions are not emphasized enough. Findings reported by Breese et al. [8] show that few organizations have thorough processes for BM. They claim that the lack of a common set of definitions for benefit and value has contributed to this situation. Interestingly, neither of the studies by Casey et al. and Breese et al. assessed the empirical effect of BM practices on actually realized benefit. Furthermore, the recent literature review by Holgeid et al. [3] of BM in software development projects found that many organizations had the potential for further adoption of BM practices, and that BM practices were also more common in the early phases of IT projects (planning and identification) than in the later project phases and in the benefits evaluations after project termination. The empirical results in our study are based on high-quality and first-hand project data from the public sector in Norway. While the Government demands thorough cost-benefits analyses and plans before a project is started, there are fewer requirements regarding the follow-up of the plans and evaluation of realized benefits.

The paper focuses on how BM is practiced through the lifespan of the analyzed governmental software projects. We aim to answer the following two research questions (RQs):

- RQ1: How are benefits identified and planned?
- RQ2: How is BM practiced during the execution phase of IT projects?

Section 2 presents a definition of BM and related work. The data and methodology for this study are described in section 3. The empirical results are given in section 4, before the limitations of the study and the conclusions are presented in sections 5 and 6, respectively.

2 Terminology and related work

In this paper we apply the definition of BM in IT projects used by both Peppard et al. [9, p. 9] and Ward et al. [10, p. 214]: “*The process of organizing and managing so that potential benefits arising from the use of IT are actually realised.*” This definition of BM follows the five steps introduced in the Cranfield model, introduced by Ward et al. in 1996 [10]: (1) Identification and structuring of benefits; (2) Plan nbenefits realization; (3) Execute benefits plan, (4) Evaluation of benefits; and (5) Establish potential for further benefits. The Cranfield model is shown in Figure 1.

With regard to the planning and identification of benefits, Lin and Pervan [11], and Ward et al. [10] point out that it is challenging for organizations to achieve benefits effectively without a plan for their realization. An example of results from the Norwegian context is reported by Jørgensen [4], who found a 31 percent increase in realized benefits in projects that had prepared benefit plans. Ward et al. [12] found the following features among organizations that were successful in the realization of benefits: They had an emphasis on identification and structuring of benefits, they rarely exaggerated estimated benefits, and they often included a broader selection of benefits in the business case.

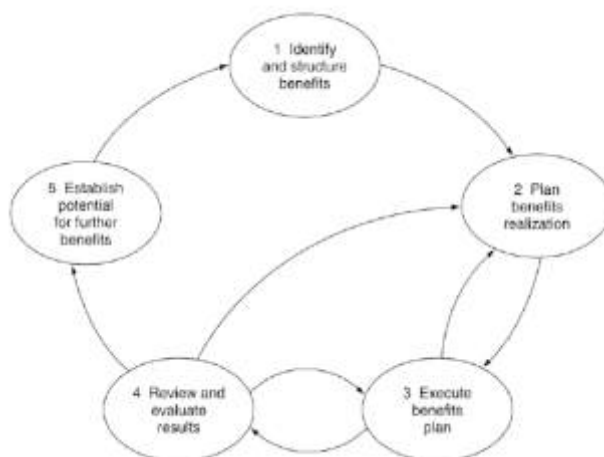


Figure 1 The Cranfield model of BM

Other researchers have found similar relationships between thorough identification and structuring of benefits, and realized benefits, such as Musawir et al. [13] and Mohan et al. [14]. Musawir et al. found a significant positive effect on project investment success in projects in which benefits were clearly measurable. Correspondingly, Mohan et al. found a positive relationship between the identification of benefits and the actual realization of benefits. Not all results are equally strong and some studies report that there seems to be only a weak link between the preparations of the business case and actual realized benefits. Holgeid and Jørgensen [15] report almost no differences in realized benefits between projects that emphasized the business case and projects that did not. A weak link in this respect is also reported by Badewi [16], who found that an emphasis on the preparation of the business case alone was not sufficient to ensure the realization of benefits.

Jørgensen [4] found a significant increase in realized benefits among IT projects that practiced BM during the project execution (34 percent increase) compared with projects without such practices. In a study published in the following year, Jørgensen et al. [17] found that 50 percent of the projects without BM during implementation experienced major problems, compared with 18 percent of the projects that practiced BM. Additional support for the relationship between benefit delivery and BM during project implementation is provided by Holgeid and Jørgensen [15] and by Mohan et al. [14].

3 Methodology

3.1 The projects

The empirical data in this study is mainly qualitative and was gathered with the purpose of giving evidence-based advice in order to contribute to better benefits management in the Norwegian public sector. In total, we collected information about 23 projects by interviewing project relevant personnel (project owners, benefits owners) and reading project documents. The selection of projects was to a large extent based on availability (convenience sample), but was also done with the purpose of covering different types of public investments in IT. A cost-benefit analysis (CBA) together with a plan for benefits is required for public IT projects in Norway, but the scope and comprehensiveness of these documents vary. Of the 23 IT projects, 10 were selected from a funding scheme administered by the Norwegian Digitalisation Agency (labelled NDA projects), where requirements for documentation of CBA are

thorough. The funding scheme covered up to 50% of the cost of the IT projects, and all 10 projects had been approved for funding. Only 8 of the 23 IT projects had been through at least one review within the Norwegian Quality Assurance Scheme (labelled QA projects), and 5 projects were from the defense sector (labelled DS projects). The empirical results presented in Section 4 are divided into two groups, where results in the first group are based on documentation and interviews relating to 14 of the 23 projects, and the results in the second group are based on analysis of documents from all 23 projects. Most of the projects selected were finalized from 2019/2020 and onwards (some were not yet fully finalized when the study took place, but they were developed enough for benefits to materialize). This enabled us to receive a recent information on the status of the use of BM practices.

The projects' documentation contained data on cost-benefit analysis, plans to realize benefits, quality assurance reports, project termination reports, and in some cases project evaluations. Data from the QA projects are based on document reviews. Five of the QA projects were not finished at the time when the study was conducted. Data from these projects are on the CBA and benefit plans received from the entity in charge.

3.2 Data sources and observer triangulation

Information on practices within benefit management was collected from different sources, which enabled us to strengthen the analysis by comparing the consistency of the information, typically between interview respondents and project documentation. The interviews were held with project personnel, with particular focus on the planned benefits. In most cases, the interviewees had the roles of project owner and benefits owner/responsible. The interviews had a duration of 1–1.5 hours and were completed for all 10 NDA projects and 4 of the DS projects. All four researchers in the group conducted interviews, and had more than five years of experience in research on public projects. For most of the projects, we conducted two or more interviews. Typically, at least the project owner and benefits responsible were interviewed, to capture both perspectives (see Appendix 1). The interviews were structured with short questions for which there were standardized options for the answer, as well as with more open questions for in-depth answers. At least two researchers were present at the interviews, and all interviews were recorded in Teams. The researchers took notes independently during the interviews, and then compared their notes afterwards. We then replayed the recordings to reach the consensus on the data gathered, and to make sure all relevant information was gathered. Thereafter, the results were presented to each interviewee to give them the opportunity to provide additional input/clarification. For the analysis, quantitative data from the documents and interviews were entered into an Excel spreadsheet, which allowed the researchers to analyze the spread of the short answers. The sheet was then used together with the documentation of the in depth-answers for further clarification in the analysis.

4 Results and discussion

4.1 How are benefits identified and planned?

A total of 15 of the 23 projects (65%) had some form of a cost-benefit analysis (normally describing expected benefits for public sector users and the society as a whole). The scope of the analysis varied, and for some of the projects only the minimum requirement was fulfilled, typically in form of a brief one-page description of benefits. The document analysis further revealed indicators of a lack of skills in conducting the CBA. A typical example was the lack of consistency in the use of terms, as well as mixing the terms “societal benefits,” which relates to the aggregated willingness to pay in the society, with “goals” or “goal achievements,” which relate to defined goals for the IT project. Also, the project output/deliverables are sometimes presented as actual benefits; for example, the benefits are implied through the use of the terms “standardized solutions” or “better information access.” However, these are not necessarily actual benefits, but may be prerequisites for or indicators of benefits. The actual benefit will be in the form of saved time (and thus reduced cost), better-quality decisions, or other improvements that can provide a more direct benefit to users. This mix of project outputs/deliverables and benefits is a common problem, as pointed out by Aubry et al. [18]. The two types of benefits can be harmonious, but can also often be in direct conflict, for example if the increased income for the public entity comes with a direct cost for society in the form of increased government spending. Another observation was the mixing of *indicators* of benefits and *the benefits themselves* in the CBA (i.e., a situation similar to the one documented by Aubry et al. [18]). Indicators of benefits are typically prerequisites for the actual benefits that can take the form of either “standardized solutions” or “improved basis for decisions.” The actual benefits that come from these are time saved (costs saved) or quality improvements that come after the

indicators in the chain of results. Combining time saved with quality improvements can result in double-counting of benefits and cause misinformation about the magnitude of actual benefits from the IT project.

From the interviews, we found there was a tendency for the CBA to mainly serve as a means to secure project approval and financing (i.e., to demonstrate a positive net outcome for the business case). This finding is illustrated in Table 1, which shows that the majority of respondents considered that showing decision-makers that benefits would exceed the costs was either “very important” or “important.” By contrast, when asked about both the CBAs’ contribution to ensuring that all the important benefits were identified and its contribution to good BM during the project, the largest proportion of answers to both questions was “less/not important.”

Table 1 Purpose of the CBA

What was the purpose of the cost-benefit analysis	Percentage share of responses (n = 14)
Show decision-makers/granting authority that benefits exceed costs	Very important: 64% Important: 14% Less/not important: 21%
Ensure that <i>all</i> the important benefits were identified	Very important: 7% Important: 29% Less/not important: 64%
Contribute to good benefit management during the project	Very important: 0% Important: 36% Less/not important: 64%

When asked about how comprehensive the process of identifying and structuring benefits was more than one-third amount of the respondents (36%) answered “Not comprehensive”. Still, 46% and 21% answered “Comprehensive” and “Medium comprehensive, respectively. These answers are dispersed and correspond to the findings from the project documentation, for which the comprehensiveness and quality of the analysis varied considerably.

Some benefits will manifest in the public entity responsible for the digitalization initiative, while others will manifest in other public entities or in “society at large.” In the two latter cases there will be external benefits owners that should be involved during the planning and execution of the benefits management. When asked about the actual involvement of such external benefit owners, 50% of respondents answered that they had been involved (“yes”) or to some extent had been involved (“partially”).

Almost all (83%) of the 23 projects had benefit plans that described in more detail the type of benefits to be realized, together with when and how the benefits should be realized. We found that on average there were eight benefits per project. Of the benefits, 53% were internal benefits to be realized in the responsible governmental entity and 47% were external benefits to be realized in other governmental entities or by users outside the public sector.

From the document analysis, we retrieved results relating to the quantification, monetizing, and timing of benefits. Quantified benefits are often presented as counted measures of output, and they differ from benefits in the form of quality improvements. Quantifying benefits can serve as a prerequisite for monetizing them in a CBA. The results of the document analysis with regard to the quantification and timing of benefits are shown in Table 2.

Table 2 Quantification and timing of benefits

Quantification of benefits	Percentage of responses (n = 23)
Percentage of total benefits that were quantified	45%
Percentage of total benefits that were monetized	23%
Percentage of projects where all benefits were quantified	13%
Percentage of projects where all benefits were monetized	0%
Did the plan include when benefits will be realized?	Percentage of responses (n = 14)
Yes	93%
No	7%

Did the plan include benefits realization during project execution?	Percentage of responses (n = 14)
Yes	29%
No (only after project completion)	71%

Extensive quantification and timing of benefits are not synonymous with good BM. Additional features, such as clear responsibility and plans for how to realize the benefits in practice are often needed. Several of the benefits plans we analyzed were not specific about responsibility and how benefits would be realized. The responsibility for benefits was often vaguely referred to as “private users” or “municipalities,” instead of actual persons or positions. Still, we cannot exclude that responsibility for benefits was assigned informally, as one of the respondents stated: “the actual involvement is more important than the assignment of formal roles.”

4.2 How is BM practiced during the execution phase of IT projects?

Managing benefits during the execution phase of the project is documented as a key factor in the realization of benefits (see sections 1 and 2). Our interview guide contained questions to discover practices for BM during the execution phase, both in the form of short yes/no questions and questions for which the respondents could give more in-depth answers (see Appendix 1). For 50% of the projects in our dataset, the respondents perceived BM during the execution phase as either very important or important in order to ensure success. Similarly, for 50% of the projects, the respondents highlighted the use of the benefit plan as either “important” or “very important.” However, 35% of the projects reported that the benefit plan was not important. For the questions about the general practice of BM and the use of the benefit plan, the answers were approximately equally distributed between the projects in which they were perceived as important and in which they were perceived as not important. Having a person with clear responsibility for realizing benefits was one of the most frequently mentioned features that contributed to the realization of benefits, and this was pointed out as the key success factor for 50% of the projects. The interviews pointed out that for many projects a clear mandate and authority were crucial in order for the person responsible for benefits to be efficient, as was having an operational role within the domain in contrast to being a line manager.

The interviewees reported that for more than half of the projects the realization of benefits after project termination was very important/important (Table 3). With regard to possible learning effects for the future after project termination, the projects in our dataset had used few resources to evaluate and document realized benefits (Table 3).

Table 3 Project termination and documentation

Realizing benefits after project termination is ...	Percentage share of responses (n = 14)
Very important/important	57%
Less important	21%
Not important	7%
Unclear/still under work	14%
Type of documentation	Percentage share of projects (n = 23)
There is a termination report for the project	57%
The termination report mentions benefits	48%
The termination report describes benefits in the same detail as the initial business case/benefit plan	17%
Project evaluation completed with a focus on benefits	17%

Approximately 50% of the projects had a final project evaluation report that contained some documentation of realized benefits, but very few (17%) were sufficiently detailed to enable measurement of actual realized benefits in relation to planned benefits. The average realized benefits reported by the projects approximately one year after project termination were 44% of the planned benefits. The interviewees estimated that they would eventually be able to realize as much as 91% of the planned benefits, but that there had been some optimism regarding time. That things took longer than planned was especially relevant for the cases in which a large portion of the benefit owners were external.

5 Limitations

This study is limited to the use of public IT projects from a single country. Therefore, great care should be exercised if our results are to be transferred to other contexts. The use of a convenience sample of projects further limits our ability to generalize results, as well as possible limitations from under- or overrepresentation of the population. Furthermore, digitalization in the form of IT projects is a complex process involving different stakeholders, degrees of competence, and deliveries. To answer our research questions, we have chosen a number of practices that we found relevant, but the analysis contains limitations in that important elements might have been omitted or that we have simplified contexts and/or correlation with cause and effect.

6 Conclusions

Our study has revealed both a high level of awareness and focus on BM practices, in the projects represented in our dataset, as well as shortcomings. RQ1 asked: “How are benefits identified and planned?” Putting effort into the identification and structuring of benefits in the CBA combined with involving relevant benefit owners has been reported as an important success criterion for good BM in the literature (e.g., by Ward et al. [12] and Musawir et al. [13]). Our empirical findings revealed that the main purpose of the CBA was in many cases to secure project approval and funding, and to a less extent to contribute to good BM during the project execution. We also identified a lack of skills in producing good CBAs and benefit plans. This included, for example, the use of terms and understanding of benefits in the analysis, as well as lack of involvement of all relevant benefit owners. RQ2 asked: “How is BM practiced during the execution phase of IT projects?” The shares of answers within the two categories “important” or “very important” vs. “not important” was almost equally divided. This was also the case for answers regarding general use of the benefit plan. The projects used few resources to evaluate and document realized benefits. For the projects in which such documentation existed, only a small portion had the same detail level as the initial business case/benefit plan. This finding of a stronger focus on BM in the early phases of the projects to build the business case supports previous findings reported by, for example, Ward et al. [12] and Berghout et al. [19]. The importance of having personnel with clear responsibility for benefits realization was emphasized in the interviews. Clear responsibility for benefits realization is frequently reported in the literature as having a positive effect on benefits realization (e.g., Badewi, Budzier and Flyvbjerg, Flak et al., and Thomas et al. [16,20–22]). Still, the literature does not give any definite answer to the question of where this responsibility should be placed within the organization.

6.1 Recommendations

The findings in this study form the basis for a set of five practical recommendations for BM in IT projects:

1. We recommend that the CBA should form a basis for good BM throughout the projects and as input to the benefit plans, and not only as a means to secure project approval.
2. Within the CBA there should be a clearer differentiation between benefits and indicators of benefits (deliveries).
3. We recommend that the person responsible for realizing benefits is given clear responsibility and authority in the project.
4. BM in the execution phase of the project should be applied. With support in the literature, we find that this is one of the factors that contributes most to the delivery of benefits.
5. We recommend better practices for evaluation and documentation of benefits, so that (1) projects have incentives to be realistic and measurable when identifying benefits initially, (2) projects facilitate learning effects, both during and after project termination, and (3) evaluation can coerce the project managers into having more focus on benefits instead of just technical deliveries.

Although the empirical contribution in our study contains only public projects, we consider that our recommendations could be relevant to the private sector too. Much of the previous literature is centered on the

adoption of BM practices. This study contributes to empirical findings on how BM practices are adopted, and we hope that further research will be done on the themes emphasized in this paper.

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Appendix 1: The interview guide

Part I: Structured part/short questions

Basic information on interview and interviewee

Interviewed by					
Date of interview					
Name of interviewee					
Organization					
Current position in the organization					
Role(s) in the project					
Job-experience (approx. in years)	0–1	1–4	5–10	10–20	20+
Experience of cost-benefit analyses	None	Little	Some	Much	Very much
Experience of benefit realization	None	Little	Some	Much	Very much
Additional personal information of relevance regarding benefit realization:					

Basic data on the digitalization effort

Name of project/product				
Project start (planned and actual, if deviation)				
Project end (planned and actual, if deviation)				
Organization of the effort (typical answer here is “project,” but can also be, for example, “continuous development”)				
Approx. size (fill in at least one of the columns)	Budget	Actual cost	Positions	Other
Net present value of the investment (NPV) (benefit-cost) – from the plan				
Approx. duration of planning phase (from start of concept evaluation to project start)				

Benefit analysis (as part of cost-benefit analysis before project start)

Overall purpose of the project/initiative (concise)						
Effect (benefit, value)	Category (I, E, S)	Value (price, or by importance)	Indicator (y/n)	Timing (d, s, m, l, vl) (or give the time interval)	Level of realization (0–100% [E]) (or “don’t know”)	Type of eval. (M, AG, AL, ?)

<p>Explanation of the questions above: Give a list (only keywords) of planned benefits (value, effects), together with Category (I = internal, own organization, E = external, other organizations, and/or S = society benefits/socioeconomic analysis), if Quantified (yes/no) (If yes, the quantified benefit distributed between internal, external, and society), if there are use of Indicators/Measurements for <i>how</i> realized benefit will be measured (y/n), and Timing of when the main part of the benefit will be realized (d = during the project, s = short= (0–3 months after delivery), m = medium (3–12 months), l = long (12–24 months), vl = very long (> 24 months)).</p>						
<p>Questions on project outcome (grey background – to be asked after the questions below have been answered): For planned benefit (previously completed), write Level of realization outside each row (0–100%). If it is to early to say, ask for an estimate (mark this “E”, after level of realization) of how much the respondent thinks they are going to realize. Give the type of evaluation (Type eval.) of benefits (M = Measurements, AG = Assessment, good information, AL = Assessment, little information, ? = don’t know/very little information).</p>						
Is there documentation on how calculations of benefits are done (not just the final sum)? <i><If yes, ask for the documentation.></i>						
Was a “utility/benefit map” or similar tool used to show context between benefits and strategic goals?						
Were the benefits subject to a risk analysis? If yes, describe briefly how. <i><Possible types of analyses: Conditions for the realization of benefits, risk & consequence, quantified></i>						
Which of these understandings of “benefit” do you consider closest to the one used in the benefit analysis?	Benefit that occurs if nothing unexpected happens (all important prerequisites were right)					
	Benefit adjusted for uncertainty/risk					
	Most likely benefit					
	Other (specify)					
How important (your appraisal) were the following purposes for the work with identifying and assessing benefits? <i><Use the respondents own words – for example “important” – or use a scale; not important-somewhat important-very important></i>	a) Show decision-makers/granting authority that benefits exceeds costs.					
	b) Ensure that <i>all</i> important benefits were identified					
	c) Contribute to good benefit management during the project					
	d) Other purposes? (fill in):					
How comprehensive (your appraisal) was the effort on identifying and assessing benefits? <i><Use the respondent’s own words (e.g., “comprehensive”) or use a scale: not comprehensive, somewhat</i>						

comprehensive, very comprehensive>	
To what extent do you agree to the following statement? <Use the respondent's own words, or use a scale: I very much agree, I slightly agree, I don't agree>	<i>We found little/no reason to identify more benefits than necessary to ensure project approval</i>
Were (if relevant) representatives from other organizations involved? (If yes, who and in what role were all relevant persons involved?) No/not relevant	
Benefit realization plan or equivalent. If such a plan was <i>not</i> made, connect the following points to activities related to benefit management as described in other documents	Use the respondent's own words, or use a scale adjusted to the question.
<ul style="list-style-type: none"> To what extent did you make a plan for how benefits should be realized (benefit owner, process) 	
<ul style="list-style-type: none"> To what extent did the plan include the phase after project termination? 	
<ul style="list-style-type: none"> Who (what role (s)) had responsibility for benefit realization in this phase? <project leader, product owner, benefit owner, ... > 	
<ul style="list-style-type: none"> Did the plan include when benefits would be realized? 	
<ul style="list-style-type: none"> Did the plan prioritize between benefits? 	
<ul style="list-style-type: none"> Did the plan include realization of benefits during the project? <p>NB If yes, fill in approx. the share (0–100%) of benefits planned to be realized during the project</p>	
<ul style="list-style-type: none"> Does the plan include activities/roles focusing on <i>not-planned benefits</i> (new possibilities)? 	
<ul style="list-style-type: none"> Did all/many/some/no external benefits have external benefit owners? 	
<ul style="list-style-type: none"> To what extent did the plan include documentation of benefits? 	
<ul style="list-style-type: none"> Did benefits and/or benefit 	

plans change or become updated during the project?	
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Organization of the project

How was the development project manned? (internal: organization receiving the benefit; external: purchased assistance)	Only internal	Mostly internal	Equal share	Mostly external	Only external
If external resources, what type of contract was used?	Fixed price	Per hour	Lease /frame agreement	Share of risk	Other (specify)
What type of development method was used? (Agile, lean, scrum, Kanban, waterfall)					
Were there deliveries during the project/continuously? If yes, how often, and did these deliveries go to “production”?					
To what extent was the benefit analysis used in the implementation of the project? <Use the respondent’s own words, or use a scale: very much, somewhat, not at all>	Prioritization of deliveries	Supporting decisions in the effort to realize benefits	Other prioritizations and decisions (fill in)		

Outcome/result of the project/effort

To what extent were planned benefits realized?	Use the table of planned benefits, see above. If relevant, add no planned benefits.				
Did essential negative effects occur? (“non-benefits”/disadvantages) Which?					
To what extent do you agree with the statement – for this project. Use the respondent’s own words, or use a scale: I very much agree, I slightly agree, I don’t agree>	Many of the benefits are hard to measure in a meaningful way	It is difficult to know to what extent the project deliveries have caused the benefits	Estimated benefits were too optimistic	It was easier to realize benefits in own organization than in other/external organization	
To what extent do you consider the project	Cost control/budget	Time control	Productivity	Technical quality	

successful? <Use the respondent's own words – or use a scale: very, partly, not successful> + actual data on cost/time deviations from estimate and planned duration					
To what extent did you experience the following (if relevant) to be important for realization of benefits? <Use the respondent's own words (e.g., "important"), or use a scale: not important, somewhat important, very important>	Cost-benefit analyses	Benefit-realization plan	The role of the benefit owner	Management of benefits during the project (prioritization, learning)	The effort to realize benefits after completion of the project

Part II: Benefit-realization process (in depth questions)

We ask the benefit owner (or equivalent, fill in the naming of that role) five questions. The goal is to understand how the process to realize benefits is carried out in practice.

Question 1: What responsibility and authority has the benefit owner had in the project?

Question 2: Which processes/activities have contributed to benefit realization in the project? *<Emphasis on innovative practices that can inspire others. If such practices are found, it is important to ask follow-up questions on how these are carried out specifically.>*

Question 3: What were the biggest challenges and successes in managing benefits during the project, realizing benefits, and the documentation of benefits in this project? *<Also emphasize innovative ways to document benefits>*

Question 4: What do you consider the most important factors to succeed in realization of benefits in IT projects? What properties, types of competence, responsibilities, and level of authority should the benefit owner possess? (generally speaking)

Question 5: Is there anything else we should ask about, that is important for benefit realization?