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# Exploiting Is/It Projects' Potential - Towards A Design Theory For Benefits Management

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# EXPLOITING IS/IT PROJECTS' POTENTIAL – TOWARDS A DESIGN THEORY FOR BENEFITS MANAGEMENT

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## Abstract

*Despite organizations' substantial investments in information systems and information technology (IS/IT), the successful realization of appropriate benefits is still often considered a major organizational challenge. Benefits management (BM) aims at resolving this issue and has become increasingly popular in recent years. Although several papers have been published in this domain, they mainly focus on descriptive research endeavors. Prescriptive research dealing with design science for holistic BM is still scarce. At the same time, BM approaches in practice are still immature and are often unsuccessfully implemented. These gaps motivate our research, which aims at developing a design theory that represents the core aspects of effective BM implementations. Based on an exploratory field study, we first analyze the issues that inhibit BM implementations in practice. We find that BM often suffers from unclear accountability for benefits realization and organizational resistance to change. Based on our findings, we inductively derive a set of meta-requirements that ultimately lead to eight design principles and testable propositions explaining how these principles tackle the challenges associated with BM. Finally, in two iterative design cycles, we conduct interviews with subject-matter experts to validate and refine our design principles. Our research helps organizations locate, understand, and correct flaws in their BM implementation. Moreover, our design theory extends the nascent body of knowledge on BM.*

*Keywords: Benefits management, design theory, exploratory field study*

# 1 Introduction

The effective management and realization of benefits from *information systems and information technology* (IS/IT) investments is an interesting research topic in the IS field, and one that has been the subject of much debate in recent years. This topic is of interest to practitioners, as they implement IS/IT to gain certain benefits, for example, to improve an organization's effectiveness and efficiency (Hevner et al., 2004), and not for the sake of the IS/IT investment itself. Nevertheless, there is a well-established notion that IS/IT investments provide no sustainable advantages (Bharadway, 2000) and that these systems have no inherent value (Peppard et al., 2000). Instead, intermediate business processes, which are ultimately derived from "*understanding the business and committing it to change*" (Earl, 1992), improve effectiveness and efficiency (Dehning and Richardson, 2002; Melville et al., 2004). Although Earl's finding has been prevalent since the early 1990s, the achievement of the anticipated benefits has remained a challenge. As an example, (Barker and Frolick, 2003) report on a major soft drink bottler's enterprise resource planning (ERP) endeavor. The ERP in which it invested seemed to be the solution to the bottler's problems. The firm planned to realize benefits, such as integrated communication. However, although it was "successfully" implemented (in terms of a running system), the ERP turned out to be grossly underutilized and was even considered a hindrance. In this context, several approaches to achieving and maximizing the anticipated benefits from IS investments have evolved under the term *benefits management* (BM), which is defined as "*organizing and managing IS/IT initiatives so that potential benefits arising from the use of IT are actually realized*" (Ward et al., 1996). It differs from other management approaches like project portfolio management in that it puts a particular emphasis on IS/IT investment's benefits and their realization by conducting appropriate business changes besides technical implementations themselves (Ward et al., 2007). Furthermore, common frameworks like standards proposed by the PMI (Project Management Institute, 2008) do not address an ongoing exploitation of IS/IT investments' benefits after project closure.

In its early stages, research on BM was rather descriptive (Bennington and Baccarini, 2004; Schwabe and Bänninger, 2008; Walls et al., 1992; Ward et al., 2007) and the findings can mainly be considered "theories for analyzing" (Gregor, 2006) while, in recent years, some explanatory and prescriptive approaches have emerged (Ashurst et al., 2008; Doherty et al., 2011). Evidently, it is difficult to realize benefits from IS/IT investments because it involves the manipulation of interactive relationships among technological and social systems (Gregor and Jones, 2007). Therefore, we argue that research must focus on gaining better insights into the management of benefits within this interactive relationship in order to increase firms' chances of being realized.

We sought to investigate what core principles drive a successful realization of benefits and to put their essence into appropriate prescriptions that extend the scope of single projects, while taking the organization that hosts these projects into account. To this end, we propose a BM design theory similar to that of Gregor and Jones (2007) and Hevner et al. (2004). In doing so, we apply our findings from a broad exploratory field study of 29 companies and an extensive literature review to inductively derive appropriate meta-requirements (Walls et al., 1992). This ultimately leads to eight design principles and testable propositions that are subjected to two cycles of evaluative interviews with subject-matter experts and subsequent refinement, ensuring their maturity and validity. By presenting this design theory, we intend to help organizations locate, understand, and correct flaws in their BM implementation and to contribute to the nascent body of knowledge on BM.

The remainder of the article is structured as follows: Section 2 presents prior work on BM, emphasizing present approaches related to design theory. The research method is outlined in Section 3. Subsequently, in Section 4, we describe the design theory in terms of its meta-requirements, design principles and testable propositions. In Section 5 we evaluate our findings while the last section summarizes our contribution, discusses limitations of our work and gives an outlook.

## 2 Prior Work: Antecedent Benefits Management Research

Research on BM began in the mid-1990s with an empirical study on industry practices in the UK, in which Ward et al. (1996) define BM as “the process of organizing and managing such that potential benefits arising from the use of IT are actually realized.” According to this initial study of BM, many organizations were unsatisfied with the available methods for realizing benefits. Subsequently, the authors presented the Cranfield BM process model as a means of overcoming this hurdle. This process model remains one of the most widely used and cited models in the BM research field. It outlines the scope and nature of BM in five stages: (1) identifying and structuring benefits, (2) planning benefits realization, (3) executing the benefits realization plan, (4) evaluating and reviewing the results, and (5) discovering potentials for further benefits. Furthermore, tools, such as the benefits dependency network (BDN), have been developed for BM (Peppard et al., 2007; Ward and Daniel, 2006). The BDN is used to link the overall investment objectives and required benefits (the ends) with the necessary business changes (the ways) and the essential IT capabilities (the means) that enable these changes. While we acknowledge that artifacts, like the BM process model and the BDN, may help firms to understand and apply BM, we see a significant need for further development, as many organizations face challenges that have not yet been addressed. For instance, both artifacts give little advice on how to integrate BM into the larger domain of IS/IT management, how to establish an accountability framework for BM or how to develop incentives for stakeholders to implement benefits.

Some research within the BM field has drawn on the resource-based view to address the question of how an organization can increase the likelihood of its IS/IT investment’s projected benefits ultimately being realized (Ashurst et al., 2008). Ashurst et al. (2008) have developed a benefits realization capability model that is enacted through a coherent set of benefits realization competencies; every such competence is underpinned by a closely related suite of benefits realization practices. Doherty et al. (2011) recently conducted three case studies investigating BM’s successful realization in terms of success factors and provide six resulting principles. While we consider these principles a useful contribution, it should be mentioned that their research endeavors’ focus is primarily on how BM might enhance traditional success factors and not on tackling the challenges of better BM implementations. Besides, the three case studies have a rather narrow focus, which limits their external validity and makes it difficult to derive general recommendations.

Despite these and other previous research endeavors, which are important milestones in the evolving discipline of BM, well-defined methods, techniques, and tools for benefits realization are still lacking (Ashurst et al., 2008). We argue that this research gap requires new artifacts that should be contextualized from an organizational perspective, emphasizing the core principles that significantly influence the success of BM realization. Therefore, in this paper, we raise the question of what the constituent characteristics of an effective benefits management are.

## 3 Research Method

### 3.1 Design Science Paradigm

Our study can be classified as design science research (Baskerville, 2008; Hevner et al., 2004; March and Smith, 1995; March and Storey, 2008). As a problem-solving paradigm (Hevner et al., 2004) that is also prescription-driven (Gregor and Jones, 2007), design science research seeks to create things that serve human purposes (March and Smith, 1995) and that provide solutions to management problems (Gregor and Jones, 2007). The result of our research is a design theory (Gregor and Jones, 2007; Walls et al., 1992) of which we present the following structural components in this paper: The *purpose and scope* of the design theory is to develop sophisticated design principles based on meta-requirements that are inductively derived from our explorative field study’s findings. These *principles*

*of implementation* capture those constituent characteristics of a benefits management that are causal for its effectiveness. By means of *testable propositions*, we capture the cause-effect chains from the design principles implemented to the aforementioned goal of effective benefits realization. *Justificatory knowledge* is provided by relying on BM literature, theoretical insights from other research streams, and the empirical work conducted to construct and evaluate the principles.

### **3.2 Research Process Overview**

As a first step, we performed an extensive literature review of the existing knowledge base on BM (Braun et al., 2009), which we extended with the latest literature, to ensure that we have correctly identified the problem. The result of this literature review provided first justificatory knowledge (Gregor and Jones, 2007) for our design theory. As a next step, we initiated an exploratory qualitative field study, in order to enrich our understanding of and gain empirical insights into the problem domain to acquire justificatory knowledge for a first set of design principles. We could also confirm that many organizations consider “managing and realizing benefits” an important and relevant business problem. In doing so, we adhered to Hevner et al.’s Guideline 2, which states that the objective of design science research is to develop solutions to important and relevant business problems (Hevner et al., 2004). Based on the results of the literature review and the exploratory field study, we proceeded with the construction phase of our design theory. We searched the qualitative exploratory field study data for empirical patterns that would allow us to draw conclusions on how benefits should be managed and which organizational changes should accompany the BM process. The output was a list of meta-requirements, which included the identified core issues. Subsequently, in accordance with Gregor and Jones (2007) and Walls et al. (1992), we derived appropriate design principles and testable design propositions which we tried to ground theoretically by establishing references to adjacent research streams. After this first phase of construction, our findings were subjected to two cycles of evaluation and refinement. These involved discussing our findings in a series of subject-matter-expert interviews in order to corroborate our design theory’s validity and utility (Hevner et al., 2004; March and Smith, 1995).

### **3.3 Data Collection**

To collect data, we carried out guided interviews with BM stakeholders at the top management, middle management, and project management levels. The sample included 36 interviewees from 29 organizations operating in the insurance, banking, logistics, IT provision, energy, and retail market industries. Our interviewees were at least at the senior level and some were members of the board (see Table 1 for respondent title and industry). As the benefits management maturity in most organizations was expected to be low, we opted for theoretical sampling rather than a random sample. For a company to qualify for participation it had to have (a) benefits identification and structuring practices and (b) experience in benefits management implementation. We assured all informants of anonymity.

To strengthen the internal validity of our research, existing literature – especially the Cranfield BM process model (see Section 2) – was used to form a priori constructs (Eisenhardt, 1989b). These were used to develop the interview guide, frame our questions, and structure our interview protocols (Weston et al., 2001). Based on the results of a pilot test with practitioners, we made small adjustment to the initial interview guide. The final interview consisted of 23 open-ended questions, which could be supplemented during the interview, for example, if the interviewees’ answers were not satisfactory. In order to take advantage of emergent themes and unique case features (Eisenhardt, 1989b), we steered the interview according to the interviewee’s answers. Generally, two interviewers conducted the interviews, which lasted between 60 and 90 minutes. The interviews were kicked off by asking the interviewees how benefits were defined within their organization. The interviewees were then asked to describe how benefits were evaluated, planned, realized, and controlled. Furthermore, they were asked how satisfied they were with each of the benefits’ lifecycle steps. When it was understood how BM was carried out, interviewees were asked what the BM activities’ objectives were in order to

understand the “why.” They were also questioned about cultural and social factors that affect BM. Some exemplary questions were: “How do you evaluate the expected benefits prior to IS/IT investments?” and “To what extent do the business department and the IS/IT department work together, during the project duration with regards to benefits realization?”.

These real-life data allowed us to understand the complex interactions between IS/IT investments, the activities carried out to manage benefits, and the impact of these activities on the organization. All the material gathered from the interviews was collected in a case study database and subsequently analyzed using the qualitative data analysis software ATLAS.ti Versions 6 and 7.

### **3.4 Data Analysis**

All interviews were conducted face-to-face, audio-taped, transcribed, and approved by the interviewees. The transcript, which consists of 7,618 lines, is our source of evidence regarding our field data. The interviews were transcribed following a denaturalized approach, in which accuracy focuses on the meanings and perceptions of the interviewees, rather than on accents or involuntary vocalization. The approval of the interview transcripts ensured that interviewees’ thinking was accurately represented (Weston et al., 2001). The approved interview transcripts were then analyzed using ATLAS.ti. Basic coding dimensions (construct types) included: (1) benefits management resources, such as process models, methods, policies, and tools; (2) benefits management competencies, such as identifying and evaluating benefits as well as planning and carrying out benefits realization; (3) contextual factors that promote the development of competencies, such as management support; and (4) the impact of resources, activities, and competencies. The recording units were words, sentences, or paragraphs (Weber, 1990).

We relied on process theory (Langley, 1999; Pentland, 1999) to analyze the cases, and on guidelines for case-based theory building (Eisenhardt, 1989b; Eisenhardt, 1991). To increase internal validity, we also analyzed the cases for discrepant evidence and negative cases (Weston et al., 2001) and compared inferences with BM theory. Furthermore, an additional researcher carried out coding checks to develop a shared conception of reflection (Weston et al., 2001) and ensure intercoder reliability.

### **3.5 Construction and Evaluation of the Design Theory**

We conducted two iterative and incremental cycles of construction/refinement and evaluation of the design theory to ensure and demonstrate its utility and validity (Hevner et al., 2004). In the first cycle, the design theory was constructed and consequently evaluated by subject-matter experts. Furthermore, we conducted workshops and training sessions on benefits management with practitioners, which gave us further insights into the necessities of practice. Moreover, the literature from neighboring disciplines was taken into account to further improve and provide a stronger theoretical foundation for our theory. Finally, to further improve its utility and validity, the design theory is to be evaluated a second time during interviews with subject-matter experts. We expect this second cycle to be completed at the time of the conference. With this approach, we ensure that each construction cycle is deeply rooted in the empirical findings gathered during the field study and the evaluation interviews. Exemplary links to the data are shown whenever possible in the following sections. In Section 5, an overview of the evaluation is provided along with further details of the cycles in Table 4.

## **4 A Design Theory for Benefits Management**

### **4.1 Meta-Requirements**

During our data analysis, we came across a set of meta-requirements (Table 1) that significantly inhibit benefits realization. In particular, informants found it difficult to persuade relevant stakeholders

to take part in BM. They argued that this was due to a lack of accountabilities (MR1, MR2), missing motivation (MR3), and uncertainty regarding what to do (MR 6). In addition, they pointed out that it is not enough to solely focus on one project and that the successful completion of such a project requires a strategic perspective (MR4). Establishing transparency with regard to benefits realization was constantly emphasized as one of the most important, yet demanding tasks, as participants perceived analyzing, structuring and measuring benefits as difficult and cumbersome (MR5). Similarly, the problem of benefits volatility, which is a result of changing environmental conditions, renders earlier-defined benefits obsolete because they are no longer realizable (MR7). Eventually, practitioners consider it important to establish a culture of allowing mistakes and learning from these because, at an early stage of implementation, BM usually leads to faulty benefits analysis, planning, and realization results (MR8).

<b>Meta-requirement</b>	<b>Description</b>
MR1: A BM artifact should support the distribution of benefit accountabilities among the business and IT department (19 observations).	Informants agreed on the requirement that any BM artifact should be very clear about the responsibilities of IT and business during benefits analysis, planning and realization. <i>"A critical success factor for realizing benefits is to assure accountability for the benefits in time and to involve the accountable within all project lifecycle stages."</i> (Head of Enterprise Project Management, Insurance)
MR2: A BM artifact should help define clear accountabilities for benefits realization on the business side, especially when several business units are involved (10 observations).	Informants reported that, in some situations, benefits realization depends on various business departments' contributions while only one business departments enjoys the benefits. This negatively impacts stakeholders' willingness to cooperate. <i>"Motivating business managers to contribute to benefits realization when they actually do not profit from it, is very hard."</i> (IT Manager, Chemical, during a training on benefits management)
MR3: A BM artifact should motivate relevant stakeholders to engage in benefits realization (22 observations).	Many informants have experienced a lack of motivation on the side of the business stakeholders, limiting benefits realization success. <i>"For many business managers realizing benefits is simply not on the agenda."</i> (IT Manager, Bank, during a training session on benefits management )
MR4: A BM artifact should support benefits planning and realization in line with corporate strategy and IT strategy (24 observations).	There was strong consensus among informants that BM should be regarded as a strategic activity closely related to strategy implementation. The defined strategic objectives should be in line with the planned benefits. <i>"Benefits management can be considered as a strategic activity."</i> (Consultant Process Manager and Requirements Manager, Logistics)
MR5: A BM artifact should create transparency with regard to the degree of benefits realization (20 observations).	Informants unanimously stated that one of the very first steps when introducing benefits management should be establishing transparency with regard to benefits realization. <i>"I don't see a risk for example through increased transparency of benefits realization. It is crucial for a company to possess [...] transparency."</i> (CIO, Logistics)
MR6: A BM artifact should help and guide stakeholders during benefits realization (22 observations).	Stakeholders find it difficult to plan and realize benefits on an operative level, especially if BM was only recently introduced into the organization. There is significant insecurity regarding what needs to be done. <i>"Most people are inexperienced in developing and implementing plans for benefits realization."</i> (IT Manager, Chemical, during a training session on benefits management)
MR7: A BM artifact should account for changing environmental conditions and benefits volatility (14 observations).	Informants stated that there is often a long time span between benefits analysis and benefits realization. As a consequence, benefits become volatile and often take a new form. <i>"Realizing benefits is a difficult task. Very often the assumptions made in the business case are no longer valid when benefits realization is to start."</i> (CIO, Bank, during a training session on benefits management)
MR8: A BM artifact should allow for making mistakes during benefits analysis,	BM is generally regarded as a demanding management discipline. Immature organizations and stakeholders who are responsible for benefits realization tend to make many mistakes when analyzing, structuring, and measuring benefits for

planning and realization and should foster organizational learning (24 observations).	the first time. “For example, in our organization, which is an “organization of consensus” where you try to avoid a mutual contradiction because it “hurts,” benefits management is unfortunately only very inconsequently accomplished.” (Project Portfolio Manager, Insurance)
MR9: A BM artifact should overcome “departmental egoism” (20 observations).	BM only reaches its full potential when stakeholders overcome “departmental egoism” and commit themselves to IS investment success. Benefits can rarely be implemented through one organizational unit alone. “The business department and IT department work together closely with regard to benefits realization.” (Head of IT Governance and IT Strategy, Energy)

Table 1: Meta-requirements

## 4.2 Design Principles

The design principles (DP) are directly derived from the meta-requirements and recommendations informants made during the interviews. Table 2 summarizes them and shows which DPs meet which meta-requirements. In general the eight DPs fall into three major categories: (1) The first category contains DPs related to steering and governing benefits realization. (2) The next set pertains to benefits management processes. (3) The last category refers to communication and collaboration among stakeholders.

	<b>Principle</b>	<b>Definition</b>	<b>MR</b>
Steering governance & rewards	DP1: Establish an accountability framework for benefits analysis, planning and realization	An accountability framework is established, ensuring that the responsibilities of the analysis, planning, and realization of benefits from IS investments are clearly assigned. Stakeholders should be held accountable for the benefit realization of the organizational area in which they practice (1 <sup>st</sup> order ownership). If benefits can only be realized via complex cause-effect chains, spanning multiple areas of responsibility, additional stakeholders may be held accountable for benefit realization (2 <sup>nd</sup> order ownership). In any case, 1 <sup>st</sup> order owners are responsible for the ultimate benefit realization and have to coordinate benefits realization across organizational units (downstream of the cause-effect chain). This includes a proper analysis of benefits, the definition of targets (before investment approval), realization planning, and the steering of realization. Operative work may be delegated but accountability cannot. (Päivärinta et al., 2007; Ward and Daniel, 2006).	MR1 MR2
	DP2: Define benefit-related goals and incentives	Stakeholders who are responsible for benefits realization (DP1) are committed to benefits realization through clear goals based on a thorough benefits analysis. Benefit-related goals are jointly defined, documented, and approved by all stakeholders involved and form the basis of the final investment decision. Stakeholders have clear incentives for achieving their benefit-related goals; either by means of personal rewards and /or the direct exploitation of realized benefits. The fulfillment of the goals is monitored and the rewards are only granted after realization success. The measurement of benefits realization thus requires clear metrics and performance indicators.	MR3
Process replicability & integration	DP3: Integrate benefits management with strategic planning processes	BM processes are integrated into project portfolio management (PPM), annual goal setting, budgeting, and performance measurement. PPM provides the necessary governance structures for the benefits-oriented prioritization of project investments, monitoring policies, and coordinated project reviews. Investments (projects) will only be approved when benefit-related goals are clearly defined (DP2) and accountabilities are transparent (DP1). Target setting and budgeting processes help in aligning benefit-related goals with individual and organizational goals while performance measurement provides a framework for the structured and regular measurement of benefits realization. (Ward and Daniel, 2006).	MR3 MR4 MR5

	DP4: Implement dedicated benefits planning and realization processes	Benefits realization success becomes replicable through standardized processes of planning how the benefits will be realized and processes to steer benefits realization. Investment projects are not approved without a (preliminary) benefit realization plan. General accountabilities for benefits realization (DP1) are translated into manageable work packages, covering all activities to leverage the IT investment so that benefits can be implemented. In particular, organizational change management has to be a part of the benefits realization plan. In order to allow for efficient implementation, benefits realization has to be measured regularly. This gives stakeholders the opportunity to take corrective measures whenever required. Benefits-related reporting has to be established on top of this measurement. (Ward and Daniel, 2006).	MR5 MR6
	DP5: Establish a benefits change management	Changes in the environment in which an IS/IT investment takes place have to be monitored. When anticipated benefits are no longer implementable due to changed contextual variables, a defined benefits change management process is triggered. This process ensures that all relevant stakeholders reassess the situation and adjust their benefits planning and realization accordingly. This includes new goals and incentives for all parties involved and requires formal approval by the (top) management. If the main benefits are no longer realizable, the investment project may be terminated.	MR6 MR7 MR8
	DP6: Continuously refine and optimize benefits analysis and measurement	Benefits analysis and measurement are established and continuously refined. Firms hold workshops dedicated to post-benefit-implementation so that stakeholders can learn from the deficiencies of past benefits analysis and planning endeavors and discuss improvement potential with regard to future investments. This should include the development, extension, and maintenance of standard benefits (benefit taxonomy) as well as established metrics for benefit measurements. (Ward and Daniel, 2006).	MR8
Collaboration & communication competency	DP7: Cultivate benefits-related cross-departmental collaboration and joint target-setting	The planning and realization of benefits takes place in a collaborative environment, involving both business and IT landscapes, which is eventually cultivated in the organizational context as such. Cross-departmental collaboration is achieved through regular joint meetings and workshops on benefits realization, a seamless information flow, open and honest communication, availability and accessibility, and benefits-related citizenship behavior. (Ashurst et al., 2008; Peppard et al., 2000; Wade and Hulland, 2004).	MR9
	DP8: Foster thinking based on boundary-spanning cause-effect chains	Stakeholders are expected to deliberate in terms cross-departmental processes and to be committed to realizing organizational improvements, even when they do not (only) occur in their organizational unit. They understand that most efficiency gains resulting from IS/IT investments can only be implemented when IT departments and business departments manage benefits jointly. They recognize that benefits realization means translating features of IS/IT into sustainable benefits via complex cause-effect chains, involving a change in employee competencies, employee behavior, and organizational processes, which often involve various organizational units.	MR9

Table 2: Design principles

### 4.3 Testable Propositions

Based on the aforementioned DPs we developed a set of testable propositions (Table 3) that describe how the DPs tackle the challenges of effective benefits management. Due to page limitations we present these propositions in the form of a table and discuss only some examples.

A reoccurring problem organizations are facing when they start implementing BM is that benefits analysis, structuring, planning and realization is often error-prone due to a lack of experience and competence (MR 8). To overcome this challenge we propose DP6 that postulates a continuous learning process and the development and maintenance of a dedicated knowledge base on benefit types, metrics and realization approaches. According to TP6 this lead to an ongoing organizational

learning process, which further improves the planning and realization success (TP5c). Furthermore, with increasing cross-departmental collaboration and a better understanding of benefits' effects, stakeholders are more willing to support the project with a better resource provision and to bring in their respective process know-how to foster benefits planning quality (e.g. TP 1b, 7a, 7b, 8a, 8b). What we theorize here is a process of stepwise capability building which requires – according to our empirical insights – several years (Ashurst et al., 2008). In fact, the resource-based view (Melville et al., 2004; Wade and Hulland, 2004) and agency theory (Eisenhardt, 1989a) may serve as theoretical explanations why our DPs work and help organizations to successfully master value generation through IT: The implementation of BM may be regarded as a process of building a very particular IS capability called IS business partnerships (Wade and Hulland, 2004) which can motivate TPs related to organizational learning, developing competencies and business IT alignment (e.g. TP 3a, 3b, 3c, 4, 5a, 5b). Agency theory may be seen as suitable theoretical lens to assess the stakeholder-related DPs (e.g. TP 1a, 1b, 1c, 2). Indeed, the relationship between (top) management and business stakeholders (middle management) is a principal agent relationship: the management as a principal wants the middle management (agent) to implement strategic objectives through IS investments.

<p><b>TP1a:</b> Clear benefits-related accountabilities (DP1) positively influence stakeholders' commitment to support benefits realization.</p> <p><b>TP1b:</b> Stakeholders' commitment positively influences the provision of sufficient resources for benefits realization.</p> <p><b>TP1c:</b> Sufficient resources for benefits realization positively influence benefits realization success.</p>
<p><b>TP2:</b> Appropriate benefit-related targets and incentives (DP2) positively influence stakeholders' commitment to support benefits realization.</p>
<p><b>TP3a:</b> Strategic planning integration (DP3) positively influences stakeholders' commitment to support benefits realization.</p> <p><b>TP3b:</b> Strategic planning integration (DP3) positively influences business IT alignment.</p> <p><b>TP3c:</b> Strategic planning integration (DP3) positively influences organizational learning on benefits management.</p>
<p><b>TP4:</b> Dedicated benefits planning and realization processes (DP4) positively influence benefits realization success.</p>
<p><b>TP5a:</b> Benefits change management (DP5) positively influences benefits realization success.</p> <p><b>TP5b:</b> Benefits change management (DP5) positively influences organizational learning on benefits management.</p> <p><b>TP5c:</b> Organizational learning on benefits management positively influences benefits planning quality and benefits realization success.</p>
<p><b>TP6:</b> Continuous refinement and optimization of benefits analysis (DP6) positively influence organizational learning on benefits management.</p>
<p><b>TP7a:</b> Benefits-related cross-departmental collaboration and joint target-setting (DP7) positively influence stakeholder commitment to support benefits realization.</p> <p><b>TP7b:</b> Benefits-related cross-departmental collaboration and joint target-setting (DP7) positively influence benefits planning quality.</p> <p><b>TP7c:</b> Benefits planning quality positively influences benefits realization success.</p>
<p><b>TP8a:</b> Thinking based on boundary-spanning cause-effect chains (DP8) positively influences benefits planning quality.</p> <p><b>TP8b:</b> Thinking based on boundary-spanning cause-effect chains (DP8) positively influences stakeholders' commitment to support benefits realization.</p>

*Table 3: Testable propositions*

## 5 Evaluation

In accordance with Hevner et al.'s (2004) guidelines for design science research we evaluated our design theory. We gathered practitioners' feedback of the DPs to ensure that our recommendations would be valuable in practice. Following the observational approach, we performed interviews to

perform an assessment of our findings. During these interviews we used a questionnaire reflecting the structure of the design theory and its constituents (i.e. structural features, PPM integration, etc.). We chose to involve practitioners in the evaluation because we consider their view on the BM design theory especially valuable. First, their involvement ensured that we did not omit important DPs. Second, we believe that this evaluation has the potential to increase the relevance and utility of our findings which has been extensively discussed in IS research (Gill and Bhattacharjee, 2009). The first evaluation was conducted by means of face-to-face and telephonic interviews. The questionnaire, together with the BM design theory, was distributed to the participants beforehand. Overall, four practitioners were involved who were males, aged 31-50, and senior executives with more than 10 years' professional experience. Overall, the initial design theory, which was constructed based on our exploratory field study, already obtained quite positive results. However, as we considered our informant's responses and recommendations quite valuable for our research goals' achievement, we strived to integrate these into our design theory in a second cycle that is currently being executed. Table 4 outlines the results of our evaluation cycles.

Cycle	Construction / Refinement	Evaluation
1	<ul style="list-style-type: none"> <li>• Portfolio management level added</li> <li>• Clear accountability framework added</li> <li>• Adoption and extension of Cranfield process model stages</li> <li>• Integration with project portfolio management</li> <li>• Emphasis of top management commitment and cultural change</li> </ul>	<ul style="list-style-type: none"> <li>• Cranfield process model useful but very specific</li> <li>• DPs too concrete, leaving too little room for organization-specific design</li> <li>• Learning regarding benefits identification and analysis not sufficiently represented</li> <li>• Benefits change management is missing</li> <li>• Suggestion for complementing our BM design theory with checklists and templates</li> </ul>
2	<ul style="list-style-type: none"> <li>• New DPs for organizational learning added</li> <li>• Reformulation of DPs towards more abstract statements</li> <li>• Resource-based view (RBV) and agency theory (AT) used as a theoretical underpinning</li> <li>• DPs for benefits change management added</li> </ul>	Currently being executed

Table 4: Design theory iterations

## 6 Discussion, Limitations and Outlook

In this paper, we illuminated the practical problem of organizations' inability to manage and realize benefits from IS/IT investments. Despite the growing body of knowledge on BM, including some design-oriented approaches, many organizations have been unable to conduct effective BM. Based on an exploratory field study, we developed a design theory tackling this problem and refined it into two iterative cycles, i.e. a construction and evaluation cycle. Our design theory reveals the constituents of successful BM implementations and translates them into a comprehensive set of prescriptive design principles. Although we cannot yet provide an expository instantiation for it (Gregor and Jones, 2007), we consider the BM design theory a valuable theoretical contribution in that our design principles and especially testable propositions add to the nascent theoretical body of knowledge on BM by providing starting points for further research confirming the determinants of BM success.

Moreover, we extend the scope of existing BM artifacts. Although the Cranfield BM process model (Ward et al., 1996) is an important cornerstone of this evolving discipline, it is not sufficient to ultimately resolve the remaining practical issues. Our design theory enhances existing prescriptive research and has the following major advantages: Our principles affect the whole organization, enabling a rather sustainable impact. Furthermore, we tackle the challenging issue of organizational resistance to change with multiple principles underpinned by proven theoretical concepts. We

acknowledge that introducing benefits management is a process of capability building that takes time. From a practical standpoint our study helps organizations understand the nature of successful BM and to implement BM efficiently, concentrating on those elements that really make a difference.

To correctly interpret the results of our work, some limitations need to be taken into account. First, we cannot yet provide an expository instantiation of the design theory, although some of the organizations interviewed in our field study had at least partly implemented some of the design principles. A realistic implementation would thus contribute to a further refinement of our BM design theory and would demonstrate that the design is worth considering (Gregor and Jones, 2007). Yet, Gregor and Jones (2007) also state that the “construction of an instantiation as proof-of-concept and the development of specific methods for building further instantiations could come later.” Second, methodological limitations might arise from criticism of the qualitative method (Flyvbjerg, 2006). While we sought to address some common concerns by relying on an established approach to case study research (Eisenhardt, 1989b) as well as by addressing validity and reliability criteria throughout the research project (Gibbert et al., 2008; Yin, 2002), our research has methodological limitations related to the sole use of interviews and in that only very few organizations displayed a very high BM maturity. Additionally, we were unable to complete the last evaluation cycle with subject-matter experts prior to this paper’s submission. This step will be completed when this paper is published.

With the increasing maturity of BM in practice, future case study research should collect data from additional sources, such as documentation or observations (Yin, 2002) to corroborate the results of our investigation (Yin, 2002). As BM implementation efforts evolve over time, rich data on BM practices should become more readily available. This might create opportunities to investigate how our proposed BM design theory can be instantiated and, subsequently, extended.

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