

Managing the Achievement of Strategic Organizational Goals through Projects: Understanding the Role of Management Practices

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Abstract

Developing organisational strategies and achieving set goals is one of the most researched and taught topics in business today. Although management disciplines such as project management are often quoted as important means of implementing and realizing organizational strategies through enabling the realization of successful projects, there is considerable confusion in organizational literature on how this happens. Grounded upon a questionnaire based survey of 456 managers and using component-based structural equation modelling technique, we find that portfolio management (PPM) and benefits management practices enable an organisation to achieve planned strategic goals. While portfolio management does this directly, benefits management achieves this indirectly by reinforcing PPM with the assurance that planned project benefits will be delivered. Furthermore, we find that alignment of Business and IT increases the effectiveness and maturity of the management concepts. We also find that in order to develop mature benefits management practices organizations need to be committed to declaring benefits management as a strategically important discipline and investing relevant resources in the adoption and diffusion of the practices throughout the organization.

1. Introduction

Developing organisational strategies and achieving strategic goals is one of the most researched and taught topics in business today [1]. Generally speaking, corporate strategy is the direction and scope of an organisation over the long-term and makes visible how an organization's corporate goals and objectives will be achieved [2]. These goals and objective are usually operationalized at a strategic business unit (SBU) level. The resulting strategic initiatives are then often grouped into portfolio of projects for implementation and realization [1] of the organisational goals. This

portfolio of projects enables the achievement of organisational goals by providing either “problem-based solutions”, which help prevent performance deterioration, or “innovation-based solutions”, which enable organizations to achieve a competitive advantage by exploiting business opportunities or creating new organizational competencies [3]. However, many portfolios and their projects fail to deliver the desired effects [3]. Although management disciplines related to projects such as project portfolio management (PPM) and benefits management (BM) are often quoted as important means of implementing and realizing organisational strategies through enabling the realization of successful projects, there is some confusion in organisational literature on how this happens and, in any case, the topic has not been researched in depth [1].

PPM refers to the practice of managing a group of projects. A project portfolio consists of a cluster of projects that are managed in a coordinated way to *deliver benefits* which support the organizational goals and which would not be possible if the projects were managed independently. While PPM is an established practice, BM on the other hand has evolved over the past two decades as an independent research discipline investigating the successful realization of benefits from IT projects [4] and is defined as “the process of organizing and managing projects such that potential benefits arising from the use of IT are actually realized” [4]. The basic assumption in BM literature is that project benefits can be realized if they are managed appropriately. Both PPM and BM have the common goal of supporting the organisation in its endeavour to achieve planned strategic goals. While PPM is pre-eminently about selecting – or prioritizing – the best projects through which the required benefits could be achieved, BM is about actually delivering the benefits [4]. Although PPM and BM are two distinct management disciplines, they go hand-in-hand depending upon each other in an endeavor to support an organization in achieving higher level objectives:

PPM does it by *choosing* the right set of benefits [5], BM by *realizing* the individual benefits.

Having clarity on how both PPM and BM practices might help organisations in achieving planned strategic goals, the objective of our study is to shed light upon 1) how these managerial concepts interact together to support the end objective of realizing strategic organisational goals, and 2) which core contextual factors might energize these managerial concepts thereby increasing their effectiveness. This paper presents the results of the concluding phase of a larger long term research project (2007 - 2011) on the ability of organisations to realize project benefits. In the first phase of this project a comprehensive literature review was conducted to familiarize ourselves with antecedent research and uncover research gaps (reference removed due to double blind review process). Following, a broad exploratory field study was conducted by investigating related managerial practices in 29 organizations. The results led to the construction of a BM success framework elucidating essential competencies, their development over time, as well as contextual factors promoting those competencies. In the final phase, the results of which we discuss in this paper, we extend our BM framework to include PPM and test it in a confirmatory fashion based on survey research methodology in order to answer the aforementioned questions and with the aim of theory building.

The remainder of this paper is organized as follows: Section 2 lays the theoretical foundation for management methodologies and introduces the main BM and PPM discourse. In the third section we derive the conceptual model and present the propositions. Next, we give an overview of the research methodology explain data collection and analysis. In the data analysis section we discuss the validation of the measurement model and then proceed with analysing the structural model using component-based structural equation modelling (SEM) technique. In the fifth section we discuss implications and limitations of our study and provide an outlook for future research activities.

2. Background

As a promising solution to realize benefits, managerial practices find support in the resource based theory (RBT), which postulates that the organization's internal resources are predictors of the economic situation and recognizes that an organization's resource position should be taken into consideration when strategic options are examined in order to create competitive advantage. Applying RBT to the general understanding of how organizations can ultimately exploit the benefits of IS/IT investments, one can argue

that IS/IT investment as such do not provide any sustained advantage, nor do they have any inherent value [3]. True value is not created by the mere possession of the resource IS/IT, but rather by an organization's ability to activate and exploit these resources [6].

Benefits Management: Research on BM as a comprehensive approach began in the mid-1990s with an empirical study on industry practices in the UK [4]. This study found that many organizations were not satisfied with the available methods for realizing project benefits. BM is, however, still a new concept. It accounts for benefits throughout the life cycle of a project until these benefits are ultimately realized. One of the most widely used and cited models outlining the scope and nature of BM is the Cranfield BM process model, which formed the basis of a UK study [4]. This model outlines the scope and nature of BM and consists of the following 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. The basic idea behind BM is the lifecycle viewpoint of the benefits of IS/IT investments: benefits have to be identified, evaluated (ex-ante), realized and evaluated again (ex-post). However, in practice, this topic is comparatively new. It is therefore not surprising that only a few organizations have methodological standards in place to realize benefits from investments in IS/IT. Therefore, there is much room for improvement. In 2007, the result of further research extending the UK study was presented. Although the adoption of BM had increased from 12% to 25% in the participating organizations, it was still not mature. Not surprisingly, a number of researchers have focused on BM's critical issues to facilitate the adoption of its practices. Despite previous research endeavours - for e.g. [3], [4], [6], BM research can still be described as an evolving discipline. Our literature review identified only 74 research papers as highly relevant to BM (60 journal articles and 14 conference papers). Of these, only 9 focused on the BM process, while the remaining 65 dealt with only one of the phases of the Cranfield BM process model. Also, academics have not analysed BM success as such. Thus far most research has been qualitative.

Project Portfolio Management: Traditionally, majority of practical and theoretical developments on project management have been related to single projects considered in isolation. However, over the past two decades organisations have developed into multi-project organisations shifting their focus from planning and controlling individual projects towards the simultaneous management of multiple projects aimed

at achieving higher level organisational goals [7]. This change was deemed necessary because organisational leaders recognized that the classical application of project-management-theory, however useful in planning, controlling, and finishing singular projects was not: a) able to align the growing number of projects and the benefits they are expected to deliver towards a common goal, and b) [was not] able to identify the execution (and realization) of which projects (and benefits) was more important and prioritize resources accordingly. Without a clear process of prioritizing projects and allocating resources organisational leaders "...will not only risk getting lost in the details of individual project plans and manpower allocations, but will also be crushed between the

conflicts and interests of project leaders and department heads" [7]. As a result a new discipline, commonly referred to as project portfolio management – application of a given set of skills, knowledge, methods to a collection of projects to meet or exceed organisational goals [1], evolved to develop a clearer vision - amidst the project jungle - of *which* project benefits contribute to the achievement of higher level strategic goals and *how* they do it. However, while PPM *assembles* the right packages of project benefits in form of project portfolios, it does not in itself *deliver* individual project benefits. Figure 1 displays the interdependencies between organizational strategy, PPM, and BM.

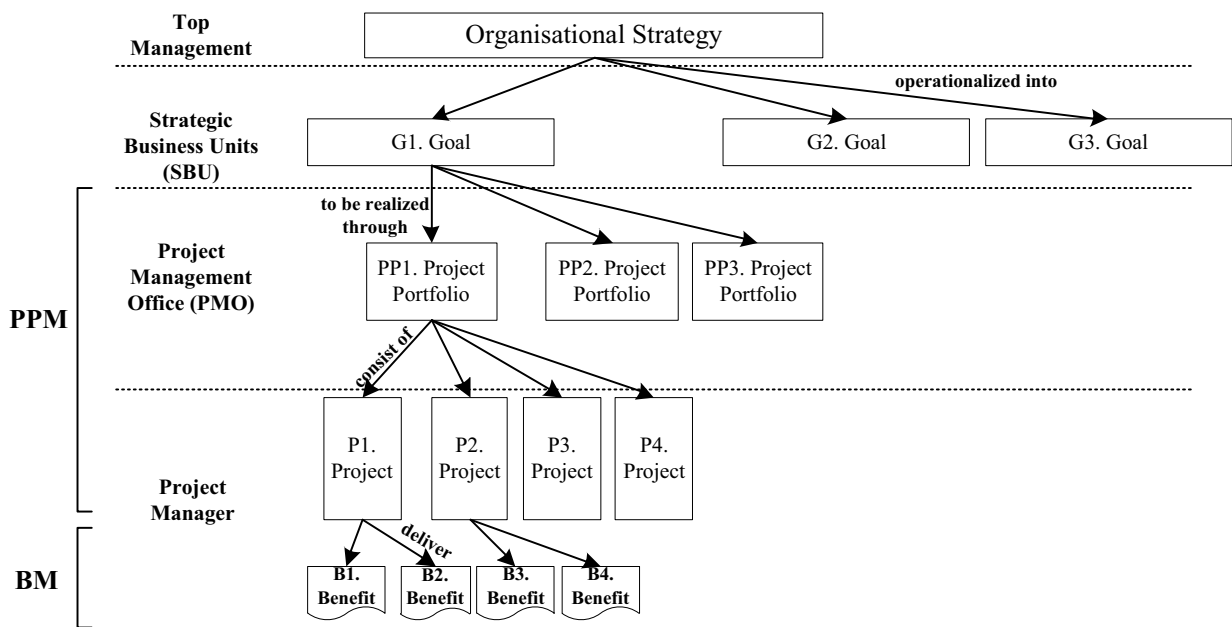


Figure 1. Managing the achievement of organisational goals

Concluding, while PPM is *external* to a project in the sense that PPM is not concerned about how a project is executed and managed in detail [5], BM is *internal* to it focusing on analysing, planning, and controlling project activities in order to ensure that the promised project benefits are realized. In this sense PPM is concerned with achieving a *global optimum* (achievement of overall objectives of an organisation), whereas BM aims at *local optima* (achievement of individual project objectives). As such, we feel that both PPM and BM are critical management disciplines which interact with each other and are dependent on each other to ensure that strategic organisational goals are achieved. According to this view, BM needs to ensure that individual project benefits are realized as planned by PPM.

3. Conceptual Model

The theoretical framework of this study is of exploratory nature since a) BM is a relative new research area, and b) the review of prior literature did not reveal commonly accepted models to investigate the interactions between BM and PPM disciplines. However, several factors were identified during the literature research shape our model. We also found support for the constructs of our research model, discussed below, in our exploratory field study carried out on beforehand.

3.1. Management Practices

Effective Project Portfolio Management: Effective project portfolio management (EPPM) is defined as the ability to identify, prioritize, and group appropriate projects with the aim to achieve strategic organisation

goals. In multi-project organisations projects are undertaken for various purposes, have a different set of stakeholders, with different interests and consequently focus on achieving their own objects independent of other projects. Individual projects therefore focus on local optimum of achieving their own objects and in most cases do not know how they contribute to the end goal of achieving hierarchical higher level strategic organizational goals. Additionally, since resources are scarce and need to be shared among projects [5], this local optimization mindset leads to a counterproductive competition to acquire the scarce resources among various departments and business units and causes confusion, disagreements [8], worsening social relations and intensifying internal lobbying activities. Previous empirical research suggest that EPPM enables value maximization of projects and the strategic alignment of project output (i.e. the benefits) to those of the organizations goals leading to higher organizational performance. PPM decisions such as which project (and their respective benefits) to accept in the portfolio, at what priority, and which resources to allocate them help balance a multitude of conflicting project goals, interests and filter those which do not contribute in a significant way to the realization of organizational objectives. By fitting the diverse set of individual project benefits to the organization's individual characteristics and strategy, EPPM enables the achievement of higher level strategic organizational goals [5]. This leads us to the following propositions:

P1: *Effective project portfolio management will be positively associated with strategic goal achievement.*

Benefits Management Maturity (BMM): Within our research model we define Benefits Management Maturity (BMM) as the depth and breadth of organization wide integration of BM in executing projects. Literature has anecdotal qualitative information about the value of BM and the effect of its maturity on an organisations ability to realize projects benefits and ultimately its higher level goals. Until recently the concept of “maturity” was seldom used to describe the state of an organization's effectiveness at performing certain tasks. Today, we find this maturity concept being used increasingly to operationalize and assess organizational capabilities. A fruitful way of adding granularity to the complex concept of BM maturity is to decompose it into a number of constituent practices, each of which is underpinned by the skills, knowledge and experiences of organizational employees [6]. Our exploratory field study and the Cranfield BM process model in particular provides fertile theoretical and empirical foundation, the basic idea behind which is that benefits have to be identified, evaluated, and realized. To understand better how maturity of BM contributes to the realization of

planned project benefits and finally organizational goals we need to understand the underlying BM practices and there implications: a) *Benefits Identification*: which is defined as the extent to which project stakeholders have transparency a-priori regarding the benefits to be realized. Benefits expectations which are not objectively identified based on sound reasoning and facts are deemed to be disconfirmed in course of the project and lead to cognitive dissonance of the responsible parties, b) *Benefits Measurement*: is the ability to develop suitable measures (both financial and non-financial) for each identified benefit [4]. Measurable variables need to be developed to allow stakeholders to understand the full scope of the investment and its impact on the realization of expected benefits. Measures enable the assessment of benefits at any given time, c) *Benefits Planning*: is the ability to effectively identify parties responsible for each identified benefit and explicitly state, based on mutual consensus, the means by which the responsible parties are to achieve the benefits i.e. plan which resources are to be used when, in which manner and by whom.

As discussed earlier, effective project portfolio management serves to identify, analyse, and quantify project value on a regular basis, to prioritize projects, and to identify which projects to initiate, reprioritize, or terminate. However, the effectiveness of a PPM depends upon its ability to actually provide the portfolio of planned project benefits. If projects fail to deliver their individual benefits the portfolio as a whole might not contribute towards the achievement of an organizational goal as planned by PPM. Consequently, mature BM practices are expected to enhance PPMs effectiveness in actually delivering the portfolio of project benefits required to achieve a specific organizational goal. Therefore, we propose that:

P2: *Benefits management maturity will be positively associated with strategic goal achievement.*

P3: *Benefits management maturity will be positively associated with effective project portfolio management.*

3.2. Contextual Factors

While management practices do provide an organization with the necessary processes, methods, and strategies of selecting, prioritizing, planning, organizing, coordinating, and controlling projects, their mere implementation might not be sufficient to ensure the achievement of strategic organizational goals because of the complex socio-technical nature of IT. In such a project environment portfolio and benefits management practices are underpinned by the skills, knowledge and experience of a diverse set of individuals involved, who have different interests,

working practices, and roles. Uniting these various groups of individuals in pursuit of the common goal of maximizing organizational value is therefore critical to the ability of an organization to realize its strategic goals.

Business/IT Alignment: The IS/IT department as well as the business department can each be considered as a specialized subunit that evolved to deal with relatively homogeneous tasks: The IS department focuses on the technical work environment whereas the business department focuses on the functional work environment. As a consequence, each subunit develops its own locally defined languages and orientations that gradually evolve from interactions among the subunit's task demands. However, the notion that achieving high performance from IT projects is not just about developing and managing systems, but is about an organization-wide activity that requires a strong partnership between business and IT, is gaining widespread acceptance in the project management literature [9]. This notion is not new in the Business/IT Alignment (BITA) research stream and was first documented in the 1970s by McLean and Soden [10]. In their paper on strategic planning for management information systems (MIS), the authors noted that "...no longer is it feasible – if it ever were – to have systems for their own sake" and that managers must "recognize that the MIS function is not an end in itself but a part – and hopefully a vital part – of the larger objectives and activities of the overall enterprise" [10]. Researchers have further argued that the crucial question for organizations to answer in this regard is: "How does IT contribute to business objectives?" It is therefore generally accepted that one of the key factors for successful realization of IT project benefits and consequently the achievement of organisational goals is the close linkage of projects and business strategies. Consistent with this argument, we suggest that the development of strong business/IT understanding enables the development of mature BM practices which help realize project benefits as expected by business units. Additionally, BITA also empowers PPM with the capability to select and prioritize projects based on the alignment of their benefits to business goals. By directing the focus and efforts of a diverse set of organisational units towards the common goal of achieving business objectives BITA supports the achievement of organisational goals.

P4: *Business/IT alignment* will be positively associated with *strategic goal achievement*.

P5: *Business/IT alignment* will be positively associated with *benefits management maturity*.

P6: *Business/IT alignment* will be positively associated with *effective project portfolio management*.

Organizational Commitment: A plethora of literature relating to the concept of organizational commitment (OC) has accumulated over the past 30 years. However, most of the research (if not all) is conducted with individuals as a unit of analysis and is defined as "the strength of an individual's identification with and involvement in a particular organization" [11]. The popularity of the focus on individuals in OC literature is due to the existence of its positive and strong relationships with several workplace behaviours such as job satisfaction, intention to quit, innovative behaviour, psychological wellbeing, ethical behaviour, and turnover [12].

Considering that OC is such a potent construct, it is surprising that OC has been neglected at the organizational level of analysis i.e. to understand how commitment of organizations influences the success of initiatives they undertake. In our study we intend to do precisely this and close this gap in literature. Therefore, organizational commitment in the context of our study is defined as "the strength of an organizations intentions or actions to pursue pre-defined goals and objectives". OC reflects how much effort firms will expend on realizing project benefits to achieve strategic organizations goals, how long they will persevere when confronting obstacles, and how resilient they will prove in the face of adverse situations. OC in this context refers to the acceptance of management practices as a discipline to plan the realization of projects benefits at an organisational level and execute necessary steps to diffuse this concept among organisational members. This decision to accept and use managerial methodologies throughout the organization is decided by the top management (e.g. CIO, board of directors) and as such failure to pledge to these practices at an organisational level and declare it a strategically important concept signals lack of commitment of organisational leaders. Even though project members at an individual level might intend to integrate the practices in their projects, their efforts are deemed to fail because of lack of organizational commitment visible in the missing resources, - organisational structures, - incentive systems, and - political empowerment [13]. Consequently, committing at an organisational level to invest in benefits management practices is a crucial step towards ensuring that the implementation and execution of these practices in individual projects, is surrounded by appropriate policies, strategy, committed people and sound relationships [6]. This leads us to the following proposition.

P7: *Organisational commitment* will be positively associated with *benefits management maturity*

4. Methodology and data

4.1. Data collection

All latent variables are operationalized as reflexive with multiple items except SGA, which is a single-item construct. Multiple items are considered more appropriate for abstract, complex constructs which are perceived to be too complex (i.e. can be viewed differently by the raters) e.g. power, corporate culture, personality. Single-item measurement of SGA appears appropriate in our case because it is a simple, unidimensional, and concrete construct (the achievement of organizational strategic goals is generally documented and regularly communicated and perceived by individuals in a similar manner) and it has been shown that a global item, as used by us, can be seen to be a perfect measure for such a homogenous latent variable [14]. Single-item global measures are also recommended for studies with a diverse population, such as ours, because of their flexibility [15]. Furthermore, we also wanted to reduce scale length, since it has been shown that use of unnecessary lengthy scales leads to decrease in response rate, break-offs, missing data, and sampling bias because people lose interest [14].

<i>Benefits Management Maturity</i>	
BMM1	Planned potential benefits are decisive for project approval for all projects in my organisation.
BMM2	Benefits of all projects are identified and estimated in my organisation.
BMM2	The realization of benefits is planned for all projects in my organisation.
<i>Business/IT Alignment</i>	
BITA1	IT Project goals and the goals of the business units are aligned with each other.
BITA2	Strategic goals of business units are aligned with the strategic IT goals.
<i>Organisational Commitment</i>	
OC1	Benefits management has a strategic position in my organisation.
OC2	My organisation is investing in benefits management.
OC3	Benefits management is indispensable for an effective and efficient execution of projects in my organisation.
OC4	We are planning to further expand benefits management in my organisation.

<i>Effective Project Portfolio Management</i>	
EPPM1	Expected project benefits are an integral part of the process of project prioritisation and project portfolio management.
EPPM2	Project portfolios are implemented in an effective manner in my organisation.
<i>Strategic Goal Achievement</i>	
SGA1	In my organisation strategic goals are achieved to a high degree.

Table 1 Survey Instrument

Since this is the first study which operationalizes BM practices for a survey, we took appropriate measures to ensure that validity and reliability criteria are satisfied. The entire development process leading to the final survey instrument (see Table 1) was conducted according to Straub's [16] recommendations. Instrument refinement was conducted based on interviews with six subject matter experts, Q-sorting exercise in two rounds with seven and eight participants respectively, and web-based pre-test with 31 participants. Finally, all items were embedded in survey questions using a 7-point Likert scale anchored at strongly disagree (1) and strongly agree (7). Data was collected via an online survey for a period of six months. Participants for the study were randomly chosen from Germany, Austria, and Switzerland, utilizing databases of professionals (e.g. XING, CompetenceSite) with keyword search such as Benefits Management, IT Project Management, Portfolio Management etc. This approach was chosen in order to elicit a wide representation by industry and size of firm. We then sent a personalized URL of the online survey to every individual identified in such a manner. Follow-up e-mails were sent to nonrespondents approximately 30 days after the initial survey URL was e-mailed to the potential respondents. Personalized survey URLs were administered to a total of 2147 individuals out of which 456 participants completed the survey which represents a 21.2 percent response rate. In order to provide an overview of the survey instrument and detailed statistical analysis results, which as a result of limited space cannot be reported here, we have compiled a document that is available at <http://tinyurl.com/HICSS-2014x>.

We addressed the issue of nonresponse bias by comparing early respondents to the late respondents. We defined early respondent (50.6%) as those who completed the survey within the first 30 days of receiving the initial invitation email. All those who completed the survey after the first 30 days were categorized as late respondents (49.4%). T-tests on early and late responders for all research variables

showed no significant differences (at the $p < .05$ level). Hence, we concluded that nonresponse bias was not a threat to our findings.

4.2. Data analysis and Results

The research model and propositions were tested and the psychometric properties of the scales assessed with the software SmartPLS (version 2.0 M3) – based on Partial Least Squares (PLS) because of the exploratory and theory development nature of our study and the strong non-normal distribution of many items. Statistical significance of the parameter estimates was assessed using a bootstrapping procedure with 1,000 resamples.

Validation of the Measurement Model: We used reflective indicators for all constructs. The adequacy of the measurement model was assessed by the reliability of individual items, internal consistency between

items, and the model's convergent and discriminant validity [16] (see table 2). Cronbach's (CA) reliability estimates were used to measure the internal consistency reliability. In this study, the CA of each constructs is greater than .70, which indicates a strong reliability for all constructs in our model. We also followed the suggestion of Chin [17] and calculated composite reliability (CR) as an alternative to CA. The CR values for all constructs are higher than .85, above the recommended minimum of .70. Convergent validity is demonstrated as a) the AVE (average variance extracted) values for all constructs were higher than .76, much more than the suggested threshold value of .50, and b) all item-loadings were higher than .81, well above the .70 guideline and statistically significant at the .001 level.

Table 2. Descriptive statistics and inter-correlations of the latent Variables

Construct	M/S.D.	CA	CR	BITA	OC	BMM	EPPM	SGA
BITA	4.54/ 1.83	0.91	0.95	0.96				
OC	4.12/ 2.02	0.89	0.93	0.44	0.87			
BMM	4.53/ 1.72	0.85	0.91	0.51	0.49	0.88		
EPPM	4.62/ 1.67	0.70	0.87	0.60	0.56	0.72	0.88	
SGA	4.83/ 1.72	1.00	0.85	0.57	0.55	0.46	0.65	0.86

Note: M = Mean, S.D. = std. deviation, CA = Cronbach's alpha, CR = composite reliability

Evidence of discriminant validity could be found since a) the square root of all AVEs were larger than interconstruct correlations, and b) all construct indicators loaded on their corresponding construct more strongly than on other constructs [17] and the cross-loading differences were much higher than the suggested threshold of 0.1. Common method bias (CMB) was evaluated through the method explained by Huigang Liang et al. [18]. We found that a) only 4 out

of the 12 method loadings are significant, and b) while the average substantively explained variance of the indicators is .787, common method-based variance is only .005. The ratio of substantive variance to method variance is about 171:1. As a result of the above evidence, the small magnitude and insignificance of method variance, we contend that common method bias is unlikely to be a significant concern for this study [18].

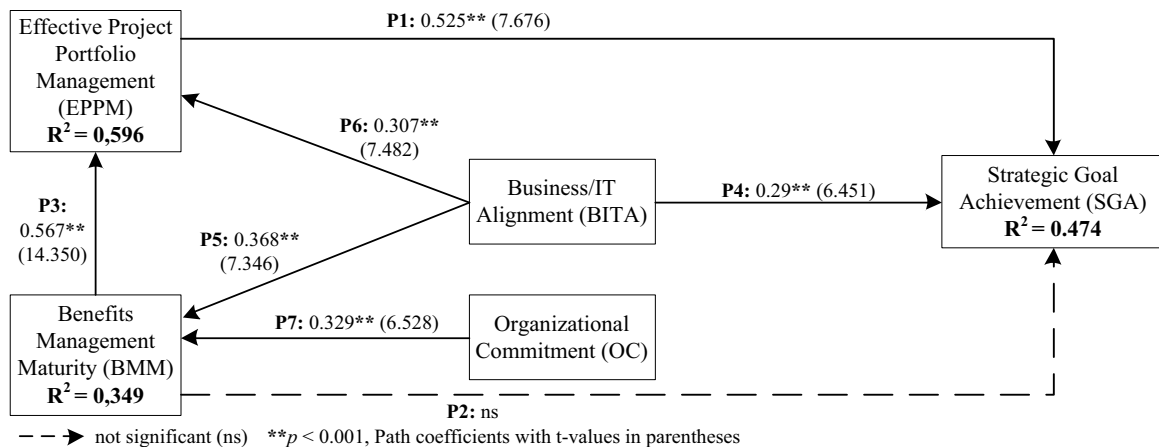


Figure 1: PLS Results

Structural Model Results: After the validation of the measurement model, the structural model was independently analyzed and the proposed relationships between the constructs were tested. Using a blindfolding approach we measured the cross-validated communality and redundancy via a Stone and Geisser test. Q^2 results for both cross-validated communality and redundancy were greater than 0 suggesting that the model has good predictive validity. A *Post-hoc* power analysis resulted in a value greater than .80 ($p < .05$), which implies that our model is able to detect small effect sizes [17]. The structural paths were evaluated for their significance. Proposed relationships were considered to be supported if the corresponding path coefficients had the proposed sign and were significant. Finally, we calculated the goodness of fit (GoF) of our model as suggested by Wetzels et al. [19] who define the GoF as the square root of the product of AVE and R^2 . The application of such formula leads to a GoF of .63, which exceeds the cut-off value of .36 for large effect size of R^2 as proposed by Cohen [20] and allows us to conclude that our model performs well. In assessing the PLS model, we examined the squared multiple correlations (R^2) for each endogenous latent variable.

Figure 1 shows the PLS structural model results. Overall we find that six (P1, P3, P4, P5, P6, P7) of the seven propositions were found to be significant (see table 4). EPPM ($\beta=0.53$, $p<0.001$) and BITA ($\beta=0.29$, $p<0.001$) together explain 47.4 percent of the variance in the dependent variable SGA. In order to provide deeper insights we calculated the effect size using the T-test. The difference between the squared multiple correlations is used to assess the overall effect size f^2 for the interaction where 0.02, 0.15, and 0.35 have been suggested as small, moderate, and large effects, respectively [20]. We find that while EPPM has a

moderate effect ($f^2=0.21$), BITA shows a small effect ($f^2=0.10$) on SGA. Regarding EEPM, we find that BMM ($\beta=0.29$, $p<0.001$) has a large effect ($f^2=0.58$) and together with the moderate effect ($f^2=0.15$) of BITA ($\beta=0.31$, $p<0.001$) explained 59.6 percent variance. We also find that BITA ($\beta=0.37$, $p<0.001$) has a moderate effect ($f^2=0.17$) on BMM, whereas OC ($\beta=0.33$, $p<0.001$) has a small effect ($f^2=0.13$); together they explain 35 percent variance in BMM.

However, the effect of BMM on SGA was found to be not significant leading to the rejection of proposition P2. In order to provide further clarification we conducted a *post hoc* analysis and found EPPM to *totally* mediate [21] the effect of BMM on SGA. Mediation analysis was conducted as recommended by Baron and Kenny [21] in a multi-step process (see table 5). First, the effect of BMM→SGA ($\beta=0.46$, $p<0.001$) was calculated without the presence of EPPM and showed a significant effect. Second the mediator EPPM was introduced in the model resulting in significant effects of BMM→EPPM ($\beta=0.73$, $p<0.001$), and EPPM→SGA ($\beta=0.64$, $p<0.001$). Third, paths BMM→EPPM and EPPM→SGA were controlled showing that the previously significant path BMM→SGA ($\beta=-0.021$, ns) is no longer significant.

Further post hoc mediation analysis (see Table 3) conducted in a similar manner as explained above revealed that EPPM also mediates the effect of BITA on SGA, since the introduction of EPPM reduced the previously strong path from BITA→SGA from ($\beta=0.57$, $p<0.001$) to ($\beta=0.27$, $p<0.001$). Because this path did not turn 0 (or not significant), it indicates the operation of multiple mediating factors and demonstrates that from a theoretical perspective EPPM “... is indeed potent, albeit not both a necessary and a sufficient condition for an effect to occur” [21].

Table 3. Post-hoc mediation analysis

Moderation effect	Step 1 X→Y (β /sig.)	Step 2a X→M (β /sig.)	Step 2b M→Y (β /sig.)	Step 3 X→Y (β /sig.)	Type of Mediation
EPPM mediates BMM→SGA	BMM→SGA (0.46/ $p<0.001$)	BMM→EPPM (0.73/ $p<0.001$)	EPPM→SGA (0.64/ $p<0.001$)	BMM→SGA (0.021/ ns)	Total mediation

Note: X=Predictor, Y=Outcome, M=Mediator, ns= not significant

5. Limitations and Future Research

Our research has certain limitation. Since the population consisted only of German speaking industrial European nations, which have similar cultural, legal and organizational, certain relationships might be found weaker or stronger in developing nations. For example in high power cultures like Japan

influence of top management and consequently OC might be much stronger on BMM and on generating commitment from organisations members towards aligning personal goals to those of the business.

With respect to measurement, our instrument evaluated self-reported perceptions. Even though such perceptual self-reports tend to be subjective, we believe that they shed significant light on the

phenomenon under investigation. In addition to above mentioned concerns there is also a need to improve the operationalization of BM constructs. Since this is the first study that developed measures for them because no validated BM scales exists, the indicators need to be further refined and validated. Some participants expressed difficulty in understanding some items, however this is not expected to be a result of our instrument development process (as summarized in the section 4), which was rather comprehensive with multiple feedback loops and followed established recommendations in the literature. We do feel that the comprehension problems might have been caused by the relative immature field of BM. For example descriptive statistics reveal that while only 3 participants had 0 years of project management experience, regarding BM this number was 153, confirming our suspicion that the participants might not be very familiar with BM concepts. Additional, only 83 participants mentioned that a separate organizational unit is in place for BM which supports them with BM related problems. Our exploratory field study also confirmed that research on BM is at the moment far ahead of its practical use in organizations, as a result of which BM concepts and definitions are not understood in the same manner by practitioners in different organisations. However, as mentioned earlier, adoption of BM in organisations is increasing rather quickly and future studies will profit from this development. We therefore recommend researchers in the future to pay special attention towards ensuring that BM concepts are understood by participants' in a similar manner and take steps necessary to reduce ambiguity.

Regarding theoretical concepts, previous research in organizational sociology has found that high bureaucracy reduces the effectiveness and flexibility of PPM practices by creating a vicious circle of formalized procedures [7]. Furthermore, the management and effect of the relationship between the portfolio manager and the project managers and the resulting consequences for communication and trust are still not well addressed in the literature, and provide fertile ground for future investigation.

6. Discussion and Conclusion

In general, the empirical results are encouraging and provide support for the two main objectives of the study. We attempt to put BM in the context of an organisations ability to achieve strategic goals and understand what role BM plays. One major objective was related to the development of a fresh perspective on the achievement of strategic organizational goals through projects. Our findings show that while PPM is *external* to a project in the sense that PPM is not

concerned about how a project is executed and managed in detail [5], BM is *internal* to it focusing on analysing, planning, and controlling project activities in order to ensure that the promised project benefits are realized. If individual projects fail to deliver their planned benefits then the portfolio as a whole fails, which jeopardizes the achievement of strategic organizational goals. In this sense PPM is concerned with a achieving a *global optimum* (achievement of overall objectives of an organisation), whereas BM aims at *local optima* (achievement of individual project objectives). As such, we feel that both PPM and BM are critical management disciplines which interact with each other and are dependent on each other to ensure that strategic organisational goals are achieved.

A second major objective of this study was to find empirical support for the theorized influence of BITA and OC. Our findings draw on the ever growing IS stream on aligning business with IT and shows that BITA has a significant effect on the achievement of strategic goals not just directly but also indirectly by sharpening and aligning the focus of PPM and BM practices with those of strategic organizational goals. In regard to BM, we find that lack of BITA might lead to projects losing track of their purpose. Benefits might be generated for a specific group of individuals but these benefits might not necessary contribute to enhancing business objective. In a similar manner BITA also ensures that PPM selection, and prioritization is based upon the degree to which project benefits are aligned to the strategic initiatives of the organization. This alignment of business and IT objective is crucial because as a result of the complex socio-technical nature of IT projects, PPM and BM are underpinned by the skills, knowledge and experience of a divorce set of individuals involved in the project, who have different interests, working practices, and roles. Uniting these various groups of individuals involved in pursuit of the common goal of maximizing business value is therefore critical to the objective of achieving strategic organizational goals.

In conclusion, there are two ways for an organization to achieve strategic goals through projects: *doing projects right* and *doing the right projects*. Our findings suggest that while PPM helps achieve the latter by selecting and prioritizing IT projects and their respective benefits in line with the organizational strategy, a mature BM supports the former by ensuring that projects are executed in a manner that they actually deliver the benefits. Previous research has repeatedly reported that effective PPM has proven to be an elusive goal for many organisations. Our study provides some clarification on how to solve this problem and seeks to advance theory and research

on what factors influence the achievement of strategic organizational goals.

10. References

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