MANAGEMENT OF IT COSTS AND PERFORMANCE IN BUSINESS GROUPS: ANALYSIS OF UNADDRESSED REQUIREMENTS

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Abstract

Information technology (IT) management is a multifaceted and sophisticated mission, particularly in the context of multinational corporations. Loosely coupled heterogeneous IT systems and almost independent IT departments within business groups around the globe do not facilitate transparency of IT costs and performance. The management of costs and performance of IT, also known as IT controlling, describes the discipline of ensuring the effective and efficient usage of IT resources. The basis of this paper is a case study of seven multinational corporations. Our findings reveal several unaddressed requirements by best-practice IT management frameworks, with regards to managing costs and performance of IT in a group context. The case study shows that IT controlling at multinational corporations has not unleashed its full potential to support the pursuit of more effective and efficient management of IT resources.

Keywords: IT performance management, IT cost management, IT evaluation, IT controlling, IT management frameworks, case study.

1 INTRODUCTION

The trend towards globalization and the rapid development of IT, influence the operations and structures of organizations. The trend towards large decentralized multinational organizations is no longer deniable (Picot, Reichwald and Wigand, 2009) and its implications regarding corporate strategies and operational decisions are obvious. In 2010, Gartner proclaimed an amount of 3.5 trillion US$ in IT expenditures, which surpassed expenditures in earlier years again. Furthermore, IT expenditures are expected to reach a remarkable growth rate of 5.1 percent in 2011 (Potter, Smith, Guevara, Hall and Stegman, 2011). Therefore, managing IT costs, assets, and resources is, without a doubt an essential part of value-driven IT management (Kohli and Devaraj, 2003; Kohli and Grover, 2008). IT budgets already account for up to 15% of corporations' revenues, depending on the business sector (Minton and Shirer, 2010). This highlights the importance of questioning the business value contribution of IT investments (Brynjolfsson and Yang, 1996; McAfee and Brynjolfsson, 2008; Remenyi, Bannister and Money, 2007).

Over the past few decades, the importance of IT has grown every year in nearly every type of business (McAfee and Brynjolfsson, 2008). Globalization strategies which were supported by inorganic growth and consolidation approaches within entire business sectors have been observed over the last 10 years (Gell, Jostarndt, Kengelbach and Ross, 2010). Corporations utilized these strategies to sustain and expand their market share as well as to facilitate vertical and horizontal integration of business value chains (Walter and Barney, 1990). The downside of the inorganic growth and consolidation approaches is the complexity and difficulty of integrating acquisitions into existing structures (Alaranta and Henningsson, 2008; Clemons and Row, 1991). As such, many management boards tend to establish a business group structure instead of integrating the acquired companies into existing business units. The resulting organizational structure is characterized by highly flexible independent legal business entities and a core entity which is able to provide managerial guidance and administrative services up to a certain level of granularity (Smelser and Swedberg, 2005). Moreover, business groups partially reflect the characteristics of a federal organization. The individual business entities can benefit from the group's collective size regarding e.g. best practice sharing and economies of scale (Granovetter, 1995; Smangs, 2006). Nonetheless, such an organizational structure creates a very demanding environment as it produces a different environment in comparison to more centralized small and medium sized corporations (Smelser and Swedberg, 2005). The efficient and effective management of IT, particularly IT costs and performance in business groups, is challenging. Major challenges include governance and alignment among business entities (Ives and Jarvenpaa, 1991; Wheelen and Hunger, 2009).

Management of IT costs and performance is also referred to as several other terms among information systems (IS) scholars worldwide. This paper uses the term IT controlling which is widely used within the German–speaking area. Other terms also include IT performance management or IT evaluation. Such terms are generally used by IS scholars from the Anglo-Saxon area (Schauer, 2006).

According to existing literature reviews (Brynjolfsson and Yang, 1996; Frisk, 2007; Gunasekaran, Ngai and McGaughey, 2006; Kohli and Grover, 2008; Rom and Rohde, 2007; Schauer, 2006; Schwertsik, Wolf and Krcmar, 2009), there are several IT controlling frameworks as well as performance management methodologies established within the IS community. Current literature, however, lacks coverage of IT controlling in a business group context (Hamel, Herz, Uebernickel and Brenner, 2010) and federal organization context (Schwertsik et al., 2009). This is also supported by the expert interviews that we conducted to prove the practical relevance of this research topic. One of the experts proposed that current theoretical IT controlling frameworks do not entirely cover the business group context. Therefore, this research study aims to investigate specific requirements of business groups in terms of IT controlling and the applicability of existing IT controlling frameworks. Consequently, we aim to address the following research questions (RQ):

[RQ.1] What are the unaddressed requirements for IT controlling in business groups?

[RQ.2] How are those requirements addressed by established IT management frameworks?

In order to address these research questions, we conducted a multiple case study analysis with large business groups which have a solid and diversified corporate structure consisting of several legally independent business entities and are operating in a global context.

The following work is divided into three parts. The first part lays the foundation of central terms used in this paper. The second part of the paper describes the requirements [RQ.1]. Finally, the third part analyzes the applicability of established frameworks [RQ.2].

2 FOUNDATION

The terms “business groups” and “managing cost and performance of IT” are of central importance to this paper. Therefore, we conducted an extensive literature search according to (Vom Brocke, Simons, Niehaves, Riemer, Plattfaut and Cleven, 2009; Webster and Watson, 2002) for the term “business groups” and evaluated as well as extended the literature review of Hamel et al. (2010) for the term “managing cost and performance of IT”.

2.1 Business groups

In times of growing market insecurity, structures which encourage flexibility and innovation are needed to facilitate a prompt response to new market developments. Furthermore, the globalization of markets, increasing complexity of management tasks, and constantly changing economic and social structures, require permanent change in organizations (Albach, Brockhoff, Eymann, Jungen, Steven and Luhmer, 1999). Corporations with group structure characteristics are capable of meeting these requirements (Bea and Haas, 2001; Diekmann, 2004). Hence, such companies are defined as business groups (Smelser and Swedberg, 2005).

Business groups consist of a collective of legally independent companies. These companies are linked by various ties, including ownership or economic means through which they achieve mutual objectives (Granovetter, 1995; Penrose, 2009; Smelser and Swedberg, 2005). On top of this collective consisting of individual companies, there is typically a core entity which at a minimum provides common administrative or financial control, or managerial coordination among member companies (Smelser and Swedberg, 2005). The level of governance of this core entity within the business group varies depending on ownership and leadership principles within the group (Bea and Haas, 2001; Hoffmann, 1993).

The core entity only acts as a form of leadership unit among autonomous business organizations within the group. Accordingly, it coordinates the corporate strategies on the business sector level and rarely beyond (Hoffmann, 1993; Smelser and Swedberg, 2005). Statistical and financial data, such as cash flows, revenues, return on investment, costs, quality, and market share, are instruments to manage, monitor, steer, and control business entities in management holding business groups (Albach et al., 1999; Bea and Haas, 2001; Hoffmann, 1993). Experts are discordant about this organizational structure. The motivation to choose such a decentralized corporate structure is to give the individual business entities the opportunity to react to market changes more flexibly and quicker as well as to be more highly adjusted to the local customer needs than a large hierarchical corporation (Diekmann, 2004; Granovetter, 1995). Utilization of various synergies between individual business entities within the group, however, is a very challenging task that requires a group-wide transparent leadership principle (Diekmann, 2004; Smelser and Swedberg, 2005).

2.2 Managing costs and performance of IT

The management of IT costs and performance, or more simply stated, IT controlling, is related to common controlling, which is also known as managerial accounting. IT controlling is thereby specialized in the IT discipline (Hoffjan and Wömpener, 2006; Horváth, 2009; Horváth and Reichmann, 2003; Horváth and Rieg, 2001). A clear definition of the common controlling term is necessary before we focus on IT controlling. The term controlling is defined as a collection of

qualitative and quantitative management instruments which are utilized to coordinate corporate information flows to support management decision processes, but do not include internal or external auditing tasks (Garrison, Noreen and Brewer, 2009; Horváth, 2009). There are several controlling approaches established with different emphases depending on the application field (Garrison et al., 2009; Horváth and Reichmann, 2003).

IT controlling focuses on a certain controlling application and covers common aspects such as data aggregation and processing, budget planning, and coordination of individual information and data sets (Horváth, 2009; Krcmar, 2009; Remenyi et al., 2007; Weber and Schäffer, 2008). Furthermore, a regional research phenomena is the level of familiarity of the term IT controlling. While the term is established within the German-speaking countries, is it almost non-existent within the Anglo-American research area (Hoffjan and Wömpener, 2006; Schauer, 2006). IT controlling is associated with differently defined terms regarding individual context: IT/IS investment evaluation (Irani and Love, 2001; Irani and Love, 2008), IT/IS performance management (Van Grembergen, 2001), IT/IS performance measurement (Van Grembergen and Haes, 2009), measurement of business value of IT/IS (Kohli and Grover, 2008) and measurement of IT/IS costs and benefits (Jurison, 1996; Remenyi and Sherwood-Smith, 1999).

The formal aim of IT controlling is to ensure the effective and efficient usage of IT resources (Irani and Love, 2008; Krcmar, 2009; Remenyi et al., 2007). Alongside formal aims, aims with regard to content are pursued, whereby business value, costs, quality, functionality, and in-time delivery are the focus (Kohli and Grover, 2008; Krcmar, 2009; Remenyi et al., 2007). Based on established literature, IT controlling can be differentiated into three core processes: planning, monitoring, and steering. Planning is defined as setting performance targets in alignment with the business and IT strategy. Monitoring means to measure the status-quo and expected deviation from it or the deviation from performance targets. Finally, steering is associated with continuous target-performance comparison. In the event that a deflection is identified, appropriate steering measures should be initiated (Horváth, 2009; Horváth and Rieg, 2001; Krcmar, 2009). A number of generic IT management frameworks, e.g. IT Infrastructure Library (ITIL) or Control Objectives for Information and Related Technology (CobiT), deliver best practice approaches for certain areas on how to carry out the IT controlling tasks (Bon and Verheijen, 2006; Gadatsch, 2009; Van Grembergen, 2001)

In the context of business groups, the specialized controlling approach of legal entity controlling is worth mentioning. Legal entity controlling supports the effective, target-oriented management and control of subsidiaries in order to increase corporate success and value (Horváth and Reichmann, 2003). The business group strategy is the foundation for the legal entity controlling. Therefore, a tailored controlling approach is developed for each subsidiary based on the legal entity controlling (Burger and Ulbrich, 2010). In contrast to legal entity controlling, IT controlling is focused on information technology, operational information systems, and data processing within the organization (Irani and Love, 2008; Kohli and Devaraj, 2003; Krcmar, 2009). It is thus rather limited to the field of information management, but is inspired by legal entity controlling. Like legal entity controlling, group IT controlling is dominated by financial key performance indicators (KPIs) rather than technologically oriented KPIs which we observed during our research efforts over the last several years.

3 RESEARCH METHODOLOGY

We designed a multiple case study (Yin, 2009) to elaborate on specific requirements of IT controlling in business groups [RQ.1] and subsequently analysed unaddressed requirements of IT controlling on the group level [RQ.2]. According to current literature reviews (Brynjolfsson and Yang, 1996; Frisk, 2007; Gunasekaran et al., 2006; Hamel et al., 2010; Kohli and Grover, 2008; Rom and Rohde, 2007; Schauer, 2006; Schwertsik et al., 2009), there is limited information available about IT controlling in a group context. The explorative and qualitative case study research method is appropriate for the theory-building stage, and aims to formulate more precise questions that future research can answer (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). Better understanding of complex phenomena in context can be facilitated by case studies. They are an established research design for qualitative

research within the area of IS (Benbasat, Goldstein and Mead, 1987; Dwivedi and Kuljis, 2008; Palvia, Pinjani and Sibley, 2007). The application of a multiple case study in this paper supports the aim to ensure external validity (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). As the unit of analysis, we defined the organizational part of multinational enterprises which is in charge of IT controlling on the group level. This might be an entire department or a group of diversified entities within the organization. For multiple case studies, 4 to 10 cases are suggested (Eisenhardt, 1989). We took 7 cases into consideration and are thereby in compliance with the recommendation. Furthermore, we tried to select comparable cases, because cases for multiple case studies should either predict similar results or predict contrasting results but for predictable reasons (Yin, 2009). This selection process was based on an analysis of accessible public corporate data, inter alia investor relations presentations and balance sheet reports. The questionnaire for the data collection was used as a guideline for semi-structured interviews with the case study participants. The general questionnaire design was inspired by several interviews with two senior IT controlling practitioners and one senior IS scientist.

During the time period from December 2009 to March 2010, expert interviews were conducted with IT executive managers of the seven aforementioned multinational business groups. The interviews took an average of 2.75 hours and were conducted by two researchers. In total, we conducted 7 interviews with an average of 2.3 expert case study participants (refer to Table 1). Answers to the questions in the questionnaire and additionally provided information, statements, and documents of the interview partners, were journalized during the interviews. These notes were electronically documented and challenged in a review process between the interview partners and the researchers. The reviewed and aligned documentation provides the basis for our detailed analysis, therefore, we used the qualitative content analysis of Mayring (2008) to identify unaddressed requirements. In addition to the qualitative content analysis, we discussed the intermediate results with two group IT controlling practitioners and two senior IS scientists on an iterative basis to outline status-quo more precisely and summarize unaddressed requirements in a list of 5 most important topics. Finally, the findings were discussed and qualitatively evaluated during two workshops with IT controlling practitioners. Each workshop consisted of a 0.5 hour presentation of the findings and 1.5 hours of structured discussion with 10 IT controlling practitioners and 4 scientists.

Case (Company)	Industry segment	Anchoring of group IT controlling	Revenue > 50 billion EUR	Employees > 100k	Number of Interviewees
ALPHA	Financial	Group CIO	✓	✓	3
BETA	Financial	Group CFO & COO	n/a	−	1
CHI	Communications	Group CFO	✓	✓	2
DELTA	Communications	Group CFO	−	−	3
EPSILON	Consumer cyclical	Group CIO	✓	✓	2
PHI	Consumer cyclical	Group CFO	✓	−	3
GAMMA	Utilities	Group CFO	−	✓	2

Table 1. Profile of case study participants and case study setup; corporate data is based on fiscal year 2009 (✓ achieved; − not achieved, CIO: Chief Information Officer, COO: Chief Operating Officer, CFO: Chief Financial Officer)

4 CASE STUDY FINDINGS

The intensive interviews with experts of different corporations highlighted the fact that no common role, responsibility definition, or established definitions of group IT controlling exists among our case study participants. Hence, the organizational anchoring also varies between the business group chief information officer (CIO) and chief financial officer (CFO). A trend towards the CFO is observable (refer to Table 1) which is facilitated by the fact that he is already responsible for the legal entity controlling or group managerial accounting as well. The majority of case study participants are

focused on the previously mentioned monitoring process only and simply report the status-quo with an ex-post perspective. The planning and steering processes are only rarely utilized.

The reporting of analyzed and aggregated IT facts and figures is one of the most common processes within the responsibility area of group IT controlling. It is used to support the monitoring task of IT controlling mentioned above. A non-negligible number of corporations indicated that they report IT facts and figures only once a year with a delay of up to 8 months after the end of the fiscal year under investigation. It was revealed that the majority of case study participants mainly focused on IT costs within their reports. These reports were similarly structured and aggregated group-wide to application development, application maintenance, infrastructure, and others. Furthermore, measuring the contributed business value of IT is a second focus, but is very rarely implemented among the participating business groups. In addition to costs and IT business value as controlling objects, IT projects for some case study participants are also in scope. Controlling of IT projects on the group level differs slightly from controlling within individual business entities. While on the business entity level almost all IT projects are within scope, on the group level, only projects which meet certain criteria are considered to be in scope. Common criteria of participating business groups are for example volume in terms of resources, relevance for more than one business entity, and/or regulatory or strategic relevance for the entire business group.

When considering the implementation of the above mentioned group IT controlling approaches, a wide spectrum of IT systems whose aim it is to support this challenging task can be observed. Its range includes simple Microsoft Excel spreadsheet tools, loose coupling of proprietary systems and fully integrated enterprise systems.

The pragmatic approach to using Excel spreadsheets is still observable and common. An integrated information systems solution, i.e. together with financial accounting, is utilized by a minority of case study participants, but in almost all cases only the large business entities of the individual business groups are integrated. Therefore, only the combination of a pragmatic approach like Excel spreadsheets together with business warehouse applications is generally in place. This bears a high risk of poor data quality and inherits several media discontinuities which increase the overall delay between data closing and reporting.

During the interviews we were confronted with a large number of specific challenges and requirements for the group IT controlling. After analyzing all of our data, we aggregated and consolidated the aforementioned requirements and discussed them in workshops with experts. This process resulted in the derivation of a list of five highly relevant requirements. According to our case study participants, the following requirements are not addressed by existing IT management frameworks:

(1) Availability of resilient IT cost and performance figures:
The majority of case study participants indicated that it is inconvenient for them to aggregate all relevant IT controlling data due to the fact that the storing of data is decentralized. This is perpetuated by the legal independence of business entities which is a key characteristic of business groups. The participants demand stringent process guidelines on how to gather the data from the business entities. Additionally, the guidelines should ensure that the data is in a compatible format and structure.

(2) Clear principles for group-wide IT project portfolio management:
In most of the investigated business groups, IT controlling is confronted with the problem that the group IT controlling has to influence the planning and steering of the group portfolio of IT projects. The aim is to realize synergy effects between the individual business entities and the business group. Therefore, the participants demand stringent and clear criteria to distinguish between group relevant projects and others as well as prioritization strategies which do not influence the business entity judgment more than necessary.

(3) Measurement of the business value of IT instead of only measuring IT costs:
Measuring the business value of IT instead of only IT costs is a general aim of many IT managers. The quantification of this value is already very challenging on a business entity

level because in-depth knowledge of the business processes and IT environment is necessary. On a group level, this in-depth knowledge is only partially available. Moreover, business processes and IT environments are seldom identical between business entities. Therefore, the measurement gets very complex and time consuming, while results remain inaccurate and imprecise. The case study participants insisted on KPIs which are generic enough to apply to all entities of the group and encompass only a low level of implementation and maintenance effort.

(4) IT controlling standards and methodologies which are applicable on the group and business entity level:
The level of standardization within the group IT controlling has a significant value. Especially when it comes to the aggregation of specific data from business entities across the group, clear and aligned standards are necessary to enable fair comparability between individual business entities. The case study participants revealed that existing standards, blueprints and best practice approaches do not reflect the requirements of group IT controlling.

(5) Integration of IT cost and performance management into the operational process cost and performance management:
Business processes are highly dependent on the support of IT services. Therefore, the case study participants demanded a more intensive integration of IT cost and performance measures into the operational cost and performance management to manage the IT costs and performance from a more holistic perspective. In business groups, this becomes very challenging. Generic business processes have to be aligned with each business entity within the group or they have to be prescinded to a very abstract level enabling comparability on a group level. This lowers the validity of results tremendously. Therefore the participants demanded a stringent methodology to migrate both approaches.

5 CASE STUDY ANALYSIS AND DISCUSSION

Prior to an analysis of the unaddressed requirements [RQ.2], we selected two major IT management frameworks, which potentially cover aspects of group IT controlling. The selection of these IT management frameworks over others was based on the positioning of each framework according to the generic information management framework (Maes, 1999). The generic information management framework is also called an "umbrella framework" for IT related frameworks. Further, the most popular and established frameworks can be segmented into five application categories (quality and business process management, quality improvement, IT governance, information management, and project management). From our perspective, the IT governance and information management categories have the highest focus on the IT controlling area. Therefore, we selected one prominent representative from each category which seemed to have the highest intersection with IT controlling, more precisely group IT controlling, according to their mapping within the generic information management framework. This characteristic applies to ITIL as an information management framework and CobiT as an IT governance framework (Bon and Verheijen, 2006). In addition to the IT management frameworks, we selected the two most frequently cited scientific IT controlling frameworks (Hamel et al., 2010; Schwertsik et al., 2009) within this research area: the information management framework of Krcmar (2009) and the IT cost and benefit tool set of Irani and Love (2008).

ITIL is a framework of best practice IT management processes which is widely accepted among scientists and practitioners. It is represented by a set of integrated and interacting processes for delivering high quality IT services to the business. In its latest edition, version 3, it consists of five books: service strategy, service design, service transition, service operation and continual service improvement (Bon and Pieper, 2008). CobiT is a generic process model that organizes a broad range of IT activities into 34 processes (Bon and Verheijen, 2006). It is clearly structured and aims to support the IT management with processes and KPIs. CobiT's main target therefore is to sustain and increase the value contribution of IT. The framework consists of 34 processes with concrete process

descriptions and KPIs. These processes are segmented into 4 chapters: plan & organize; acquire & implement; deliver & support; and monitor & evaluate (ITGI, 2007). Two distinct foci characterize the aforementioned textbooks. While Krcmar (2009) mainly focuses on theory and is far away from concepts ready for implementation, Irani and Love (2008) present a more practical approach (Hamel et al., 2010).

In the following, we mapped the unaddressed requirements which were identified during the case study with the above mentioned frameworks. The results of this analysis are presented in Table 2.

Requirement		ITIL (Bon and Pieper, 2008)	CobiT (ITGI, 2007)	(Krcmar, 2009)	(Irani and Love, 2008)
(1)	Availability of resilient IT cost and performance figures	◑	○	○	◑
(2)	Clear principles for group-wide IT project portfolio management	○	◑	◑	◑
(3)	Measurement of the business value of IT instead of only measuring IT costs	○	◑	◑	◑
(4)	IT controlling standards and methodologies which are applicable on the group and business entity level	○	○	◑	○
(5)	Integration of IT costs and performance management into the operational process costs and performance management	○	○	○	◑
Legend: *Covered* ○ *Not* ◑ *Partially* ● *Fully*					

Table 2. Results of unaddressed requirement analysis

The availability of resilient IT cost and performance figures (1) is essential to enabling all core processes (planning, monitoring, and steering) of IT controlling. Focusing on ITIL, the majority of the suggested processes are technology related which contradicts the previously mentioned financial focusing of group IT controlling. ITIL mentions on a generic level which cost figures are in focus for financial planning, cost accounting and cost allocation, but does not address the problem of how business groups should aggregate their business unit figures, nor does it provide the approach by which they should acquire those data sets (Bon and Pieper, 2008). In the monitor & evaluate section, which is relevant for our paper, CobiT just indicates that an alignment between the business and IT should be carried out. There is no statement about which sources and figures should be used for this (ITGI, 2007). Among the chosen textbooks, this topic is only mentioned by Irani and Love (2008) who use cost and managerial accounting sources among others, but only on a very generic level. Apart from the business perspective, all four sources provide approaches for the technological perspective. ITIL provides an especially useful blueprint: the configuration management database approach (Bon and Pieper, 2008).

Clear principles for group-wide IT project portfolio management (2) are required by all case study participants; especially a prioritization methodology and selection criterion between group and non-group relevant projects. ITIL covers this topic with the process “service portfolio management” only analogously. The process delivers a methodology to manage the IT service portfolio instead of the IT project portfolio, but the description provides no precise measures or prioritization strategies in detail (Bon and Pieper, 2008). The remaining frameworks and literature sources cover this topic to some extent. They focus on implementations within single business entities. They do not cover how a decentralized IT organization should carry out this task. Further, the methodologies do not cover

aspects of criteria on how the group IT controlling department should influence the planning and steering of the individual business entity's IT project portfolio (Irani and Love, 2008; ITGI, 2007; Krcmar, 2009). Moreover, Irani and Love (2008) do not cover portfolio management itself. They describe the evaluation methodology which is needed to execute IT project portfolio management.

Measuring the business value of IT (3) is a part of the majority of selected IT frameworks. Only the ITIL framework misses this part, because it focuses more on how the IT organization should organize itself in an effective and efficient manner as well as providing high service quality (Bon and Pieper, 2008). Whereas both scientific frameworks cover the topic, Krcmar (2009) investigates the task using a qualitative approach. He mentions that the measurement is challenging and has to be done, but he fails to include how this should be done concretely. The aspects of the organizational environments and how they influence the measurement of the business value are not covered. Irani and Love (2008) provide a large variety of individual and practice oriented evaluation methods to measure the business value of IT, but they do not consider organizational aspects like business groups in their approaches. Therefore, it is not proven that the methods cannot be used without any adjustments within business group environments. Further, it is not clear how results should be evaluated from a group perspective nor how methods should be applied to aggregate IT controlling objects like a group IT project portfolio.

IT controlling methodologies and standards (4), which are applicable to the business group environment, are among the selected IT management frameworks not existing. There is no framework which fully or partially addresses this requirement. If we do not focus on a group environment, at least all frameworks would partially address this requirement (Bon and Pieper, 2008; Irani and Love, 2008; ITGI, 2007; Krcmar, 2009).

Finally, the integration of IT cost and performance management into operational cost performance management (5), is our last identified requirement for group IT controlling environments. CobiT, ITIL and the framework of Krcmar (2009) do not cover this rather new aspect at all. The combination of these two approaches enables IT managers to see their domain in a greater context. This approach is especially necessary in environments where business entities are benchmarked against each other. At first glance, a higher IT cost ratio could be perceived negatively. If the overall operational cost ratio is lower due to higher IT involvement however, this initial reaction would clearly be wrong as the operational cost ratio includes the IT costs. In business groups, this task becomes challenging as the cost definitions of IT and operations have to be aligned along with many other details. Only Irani and Love (2008) deliver this approach, but as mentioned above, only for individual evaluation methods and not the from a holistic perspective. This framework would be necessary to combine the results of the evaluation methods with an overall result and judgement.

6 SUMMARY AND OUTLOOK FOR FURTHER RESEARCH

Management of IT costs and performance is a central mean for strategic IT management, especially in the environment of business groups. In our study, we try to give insights on various requirements outside of IT controlling for small and medium size businesses, specifically businesses within one legal entity [RQ.1] and analyze these requirements to see if they are addressed by established IT management frameworks [RQ.2].

An explorative multiple case study analysis based on interviews with 7 multinational business groups contributes new findings to the research topic. We recognized various approaches and organizational setups to carry out the tasks and responsibilities of group IT controlling among the case study participants. A tendency towards an organizational anchoring within the group CFO area is observable. Group IT controlling is understood in different ways and varies greatly from only monitoring to holistic controlling which includes additional planning and steering. Therefore, common controlling objects of group IT controlling are IT costs and to some extent IT projects and resources.

We observed that all case study participants have similarly unaddressed requirements in the area of group IT controlling: availability of resilient IT cost and performance figures, clear principles for

group-wide IT project portfolio management, measurement of the business value of IT instead of only measuring IT costs, IT controlling standards and methodologies which are applicable on the group and business entity level, and integration of IT cost and performance management into the operational process cost and performance management. From our perspective as scientific observers, we can determine that group IT controlling has different respectively extended requirements than IT controlling in businesses within one individual entity under the roof of one legal entity. Moreover, the unclear and inconsistent responsibility and task definition of group IT controlling, impedes an efficient and effective support of IT management. Our analysis showed that currently established IT management (e.g. ITIL, CobiT) and IT controlling frameworks (e.g. Krcmar (2009), Irani and Love (2008)) don't meet the requirements of IT controlling in a group context. Individual rudiments within the frameworks are noticeable but only rarely.

Based on our experiences and findings, we propose that the implementation of group IT controlling in business groups should be an arrangement of centralized and decentralized IT controlling instances within the core entity and business entities. The decentralized IT controlling departments are responsible for local planning, steering and monitoring of IT resources and providing group-wide standardized IT financial and performance figures regarding the individual business unit for the central IT controlling instance. The group IT controlling, is responsible for supporting the alignment process between a group business and IT strategy. Furthermore, it is in charge of ensuring a group-wide efficient and effective usage of IT. Therefore a framework is needed which defines necessary tasks, processes and methods to address these special requirements and the holistic business group perspective.

Our further research efforts will consider the elaborated requirements of IT controlling in a group context and the special environment of business groups. Therefore, our next research step will be an analysis of individual IT controlling implementations and the development of an essential IT controlling framework for business groups.

The case selection might be described as a possible limitation of the presented study. A generalization of the results could be improved by examining more cases. The utilization of further research methodologies like surveys instead of expert interviews might help to validate our findings. Among all case study participants, Company ALPHA played a special role because we had access to significantly more documents and information. This fact may have influenced our findings. However, we were aware of this circumstance and tried to judge each case study participant equally. Furthermore, the selection of the IT management frameworks which were under investigation is a second limitation. Only 4 frameworks among many were analysed but from our perspective we selected established and prominent ones, which provided a sound basis for our analysis.

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