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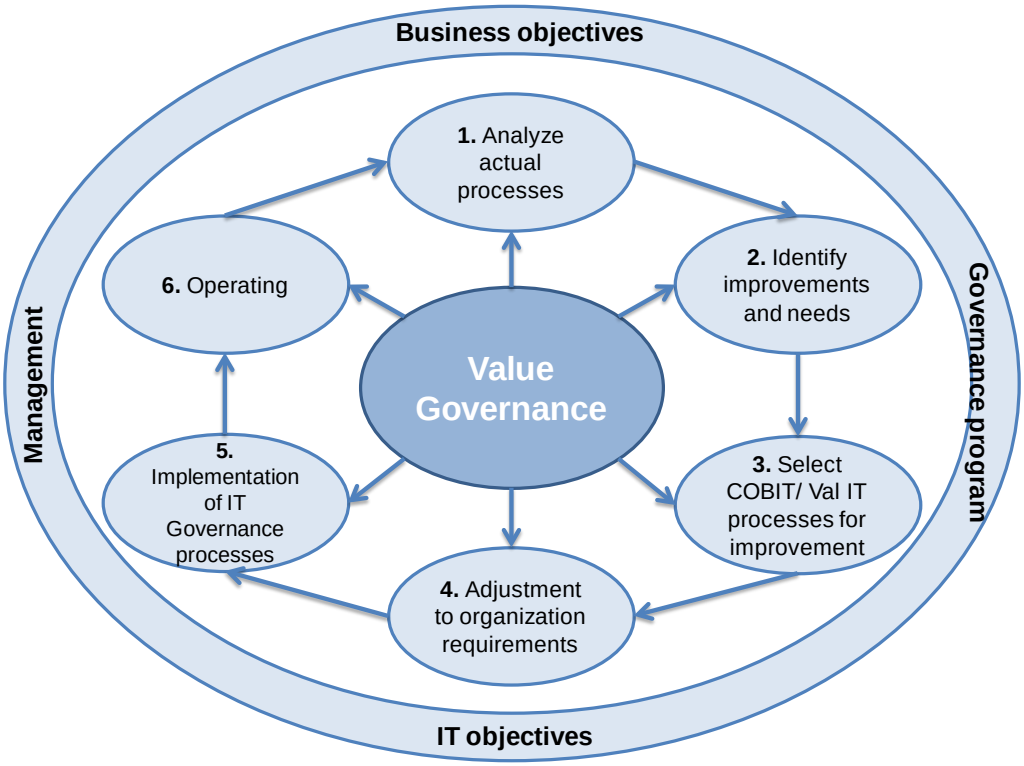

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Content

Discussion of an IT-Governance Implementation Project Model Using COBIT and Val IT

Christoph Meyer, Jörg Uffen, Michael H. Breitner

Abstract

Best-practice frameworks like COBIT or Val IT provide useful support for a sustainable and efficient IT-Governance implementation in many companies and organizations. But today, IT departments face the challenge to manage both – IT functionality and business functionality in one IT-Governance implementation approach. This study discusses the combination of the COBIT and of the Val IT framework to give implications to identify the business value of IT investments while implementing COBIT. The resulting reference model helps companies and organizations to implement their individual IT-Governance approach with a business value focus. Findings suggest a six-step approach which is influenced by a central value governance and an exterior circle containing the management, business and IT objectives and the governance program.

1 Introduction

The continuous improvement of Corporate Governance is the result of requests by stakeholders and public expectations [5]. Regulatory requirements like Sarbanes-Oxley Act (SOX) require an independent external auditor to attest management´s assertion in terms of the effectiveness of internal controls over financial reporting and disclosure [2]. The extensive integration of IT in internal control systems lead into increasing challenges for organizational IT departments [5]. These drivers cause incentives for companies and organizations to implement an IT-Governance approach with the use of comprehensive guided frameworks [12]. The IT-Governance Institute (ITGI) defines IT-Governance as “the responsibility of executives and the board of directors, (which) consists of the leadership, organizational structures and processes that ensure that the enterprise’s IT sustains and extends the organization’s strategies and objectives” [9].

Despite reorganization of IT processes, IT departments face the challenge to declare both – IT functionality and business functionality [1]. A company or organization has to find a sustainable and efficient way between a centralized and a decentralized IT organization [16]. In practice there exist several guiding frameworks which are useful indicators for an IT-Governance implementation but a combined framework which focuses both – the IT perspective and the value of IT perspective is lacking. A possible solution for this problem is a joint IT-Governance implementation approach using COBIT and Val IT. There are several triggers, supporting the integration of a business value approach like Val IT into the COBIT framework. Important trigger are for instance the identification of an IT project failure or the management requirement to get to know the business value of IT investments [8]. COBIT is an extensive framework, providing best practices of IT processes, based on business objectives. Researchers are in consent, that it is difficult to measure the business value of IT investments while implementing COBIT [19]. With the integration of the Val IT framework, processes for the value management of IT investments can be integrated in

regular business processes [19]. Both frameworks complement each other and supply a structural approach for an IT-Governance implementation.

The alignment of IT objectives with business objective do not make any sense, if there will not be an increase of value for the company or organization. Questionable is whether value is generated by the reduction of costs or by the generation of an improvement of benefits from IT-Governance optimization. COBIT does not present any models or methods solving this problem [13]. In research a positive correlation between IT-Governance and an increase in return of investments has already been proved by [14]. Therefore, the addition of a value governance model like Val IT is necessary. The aim of this research study is to develop a joint IT-Governance model using the frameworks COBIT and Val IT and build a bridge between academic and practical application. Therefore first a comprehensive literature review is used in order to identify the relationship and connections between COBIT and Val IT. Secondly with the use of qualitative expert interviews a combined IT-Governance model is developed.

The research question of this paper is:

- What are the necessary steps to implement a comprehensive IT-Governance framework which combines COBIT with Val IT?

2 Design and contents of COBIT and Val IT

The following sections give the necessary theoretical background beginning with COBIT, Val IT and a brief description of the relationship between both frameworks.

2.1 COBIT 4.1 – Control objectives for information and related technology

COBIT (Control Objectives for Information and related Technology) is a comprehensive framework that presents best practices for an implementation of IT-Governance in organizations [9]. As well as Val IT, COBIT has been developed by the IT-Governance Institute, which is part of the Information Systems Audit and Control Association (ISACA).

In order to ensure the alignment of IT strategy to business strategy, companies or organizations have to implement an internal control framework. COBIT provides an IT-Governance model that helps with the integration of IT activities into a process model and with the definition of relevant control objectives. Furthermore, the framework presents the performance measurement and includes a maturity model to evaluate each process [9]. With the “COBIT Cube” the ITGI focuses the major elements of COBIT: business-focused, process-oriented, controls-based and measurement-driven. These are described as follows:

- Business-focused

Business requirements are the basis for the “COBIT Framework” and present one of the main points of the model. Therefore, it is necessary to manage the IT resources by structured processes to achieve the business requirements [9].

- Process-oriented

COBIT presents 34 general IT processes. These processes are structured in four domains, which describe the main responsibility of IT [9].

The first domain “Plan and Organize” includes strategical and tactical elements to optimize the alignment of business goals to IT goals [5].

The second domain “Acquire and Implement” contains the implementation of the strategy and the acquisition of IT solutions [5]. This domain includes a requirement analysis and the definition of processes and guidance to acquire and maintain application software and technology infrastructure [9].

The third domain “Deliver and Support” includes all elements of value performance and maintenance of IT operation [5]. It is necessary to define and manage service levels, which facilitate an effective communication between IT management and their clients [9].

The fourth domain “Monitor and Evaluate” contains the monitoring of the IT performance and the internal IT control system. It also includes the monitoring of compliance and external requirements [5]. COBIT defines input factors and required output factors for every IT process.

- Controls-based

COBIT is a controls-based framework and defines control objectives for each of the 34 processes [9].

Controls are “the policies, procedures, practices and organizational structures designed to provide reasonable assurance that business objectives will be achieved and undesired events will be prevented or detected and corrected” [9].

- Measurement-driven

Each company and organization has to control its own performance in terms of evaluation of the status of IT systems and IT processes. The COBIT framework provides maturity model, performance goals and metrics and activity metrics in order to support these requirements.

The maturity model supports a company or organization to identify the actual performance and its objectives for improvement. The model helps companies and organizations to find the level of maturity for each process [9]. This is a basis for the analysis of existing processes, during the implementation of a new IT-Governance approach.

Each company and organization has prevailed rules and accountabilities for the IT. IT-Governance implementation is therefore often seen as an optimization of processes (see e.g. [13]). COBIT includes processes which encourage the IT-Governance, but not all processes are necessary to be implemented by every company or organization. COBIT shows possible processes, which have to be designed to the specific requirements of each company or organization.

The alignment of IT objectives with business objective makes little sense if there will not be an increase of value for a company or organization. In practice, it is not clear what the meaning of an increase in value means. In research, there is the general question whether value is generated by reduction of costs and/ or value is generated by an improvement of benefits from IT-Governance optimization. COBIT does not provide any models or methods in order to identify the value of an IT-Governance implementation [13]. In their research study, [14] found a positive correlation between IT-Governance and an increase in returns. Therefore, the supplement of a value governance model like Val IT into the COBIT framework is necessary. The realization of business value requires the generation of a competitive advantage out of the IT investment and the IT-enabled processes [20] which is lacking in the COBIT framework. The adaption of best practices to perform processes sustainably and efficiently does not give an indicator for sustained business value. COBIT

determines the requirements for the included 34 processes, defined as control objectives but do not give indicators for measurement of gained value [5].

2.2 Val IT 2.0 – governance of IT investments

The Val IT Framework provides best-practices, processes, governance principles and guidelines that help companies and organizations optimize the realization of value from IT-enabled investments [11]. The ITGI defines Val IT as a "comprehensive and pragmatic organizing framework that enables the creation of business value from IT-enabled investments" [11].

Integrating the business view, Val IT supports organizational and IT departments at all management levels while displaying a synergistic relationship with the COBIT Framework, which focuses the IT perspective [11].

The Val IT framework defines value as "the total life-cycle benefits net of related costs, adjusted for risk and (in the case of financial value) for the time value of money" [11].

The framework is divided in three domains: "Value Governance", "Portfolio Management" and "Investment Management" (see Figure 1).

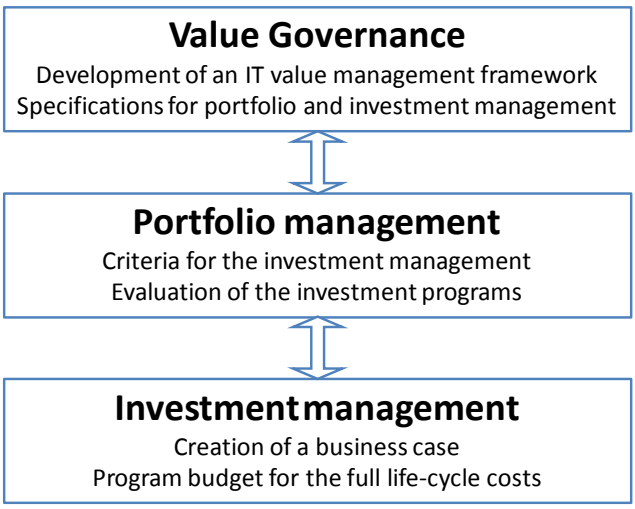

Figure 1 Val IT domains (according to [11])

The domain "Value Governance" includes the development of an IT value management framework, which represents specifications for the portfolio and investment management. The "Portfolio Management" develops criteria for the "Investment Management", based on the IT value management framework. Furthermore, the "Investment Management" defines and analyses investment programs and creates a business case in detail, which has to be evaluated by the "Portfolio Management" [11].

2.3 Connection of COBIT 4.1 and Val IT 2.0

Val IT supports companies and organizations with a comprehensive, consistent and structured model in order to create measurable business value [11]. Value aspects are not in the focus of the COBIT framework. For instance, the processes "Determine the availability and sources of funds" and "Manage the availability of human resource" are business requirements, which are integrated in the Val IT framework. Thus, Val IT considers operational business processes in the decision process for IT investments. While COBIT presents the necessary IT processes to achieve business objectives, Val IT

manages these processes from the IT value perspective. With the integration of business processes Val IT offers a necessary addition to the COBIT framework. With the business objectives of each company or organization the generation of competitive advantages in order to achieve sustainable benefits is indirectly implied. The value management has to be adapted with individual processes, oriented on the companies´ or organizations' specific structures and requirements. Val IT offers possible value governance processes, but the adjustment to organizational requirements are critical points for the business value realization. The comparative advantage view requires more than IT processes. Therefore, it is necessary to develop an extensive approach, including non-IT resources like people and managerial skills [15].

3 Research methodology

To identify the key mapping indicators in order to generate a general and in practice applicable model, explorative interviews with COBIT and Val IT experts are conducted. The interview design, principles and process is conducted in accordance to [7]. To ensure that the same general areas of indicators are collected from each expert under the premise of flexibility during the explorative interview process itself, a semi-structured interview is used. In order to create a "firm foundation for advancing knowledge" [21] and subsequently to generate theoretically validated theses for the interview guide, a structured literature review in accordance to [21] is used as an initial step.

Val IT is a niche topic in German-speaking countries. This results in limited expertise in consulting and advisory organizations. Using the basis of the literature review, the authors conducted five qualitative expert interviews, lasting from 30 minutes to 75 minutes. Interviewees are experts in both frameworks – COBIT and Val IT – with high level of experience. Further, the experts are in top hierarchical positions in different leading consulting and advisory organizations so that representativity is provided. For data collection, all interviews were tape-recorded and transcribed. The analysis and the resulting development of the model were discussed in a group of academic researchers in order to generate validated results.

The aim of this research study is to build a bridge through academic literature and practical application while implementing IT-Governance with the use of IT-Governance frameworks of COBIT and Val IT. The authors´ intention to develop a general model rather than a process model is grounded in the character of a reference model (see e.g.[3]). Most important is that reference models generally have a prescriptive notion [17] in advising e.g. practitioners in how IT-Governance frameworks and their based processes and objectives should be designed.

4 Development and discussion of a model combining COBIT 4.1 and Val IT 2.0

The following section summarizes general results extracted from the qualitative expert interviews. Section 4.2 presents the model.

4.1 Results of the explorative, qualitative expert interviews

The experts are in consent that there are different triggers for an IT-Governance implementation. In each company or organization, IT-Governance structures already exist

but are often not efficient. The main triggers of an IT-Governance implementation process are the changes of organizational structure, strategic changes of companies´ or organizations' policy or new or changed legal requirements. The implementation steps or optimization practices in an IT-Governance project depend strongly on these triggers.

One of the main triggers during the implementation of IT-Governance is the identification of gaps in e.g. controls or processes. Gaps are identified with the use of COBIT and the process optimization is concentrated on the provided best-practices. An IT audit represents a useful basis in analyzing the actual processes and can give important implications for a sustainable improvement.

Companies and organizations need an extensive and integral approach for an IT-Governance implementation. An implementation based on a general model is therefore definitely appropriate. The experts pointed out that rapid growth of organizational IT systems in a more and more multinational landscape and in many cases the disconnection of the IT sector and business sector indicate the needs for practical models. A company or organization has to decide whether the IT-Governance improvement is based on existing internal processes or if a greenfield approach is chosen. This decision is based on companies´ or organizations' general policy. The explorative interviews show that in practice a greenfield approach is very rare. Hence, an implementation based on existing processes is the frequent case.

The first step of implementing IT-Governance is that the objectives have to be determined and actual processes have to be analyzed. The experts explain that it is necessary to develop and define IT objectives based on business objectives, which should be achieved by the IT-Governance improvement. Further, it is important to determine the performance of existing internal IT processes, for instance. In this context, COBIT presents a maturity level model, which enables the measurement of the performance of existing internal IT processes. COBIT supplies a useful grid to measure the performance of actual processes and identify gaps. The experts regard this as the foundation for the improvement of existing processes and implementation of new processes. COBIT and Val IT are frameworks, which are used in practice as a collection of best practices to supply assistance for the development of individual control processes. They are implemented based on the individual requirements of companies or organizations. Furthermore, the experts regard the monitoring of processes as an important aspect of an IT-Governance approach, because the test of operating effectiveness is essential for a sustainable and efficient IT-Governance implementation.

Another point discussed with the experts is the business value from IT investments. The generation of business value is part of the Val IT framework, but the experts are in consent that Val IT is not popular in IT-Governance projects. Indeed, the general question of business value from IT investments is relevant for implementation projects. COBIT is limited to the regarding of costs without the quantification of benefits. Thus, companies and organizations often identify the business value as a reduction of costs. The experts were divided on the question whether IT investments have the potential to generate a measurable comparative advantage. On the one hand, there is the opinion that IT processes have a supporting function, but do not have the potential to improve the earnings. On the other hand, the experts regard the generating of a comparative advantage from IT investments as realistic. It is argued that first the reduction of costs is able to

generate a comparative advantage and that the improvement of process performance is also able to support this goal.

In addition, the question of the motivation for an IT-Governance approach and the role of the CIO in this context have been discussed in the explorative interviews. The experts point out that the improvement of IT processes definitely depends on the view of the CIO. In general, the CIO is interested in efficient IT processes, but there are also CIO's who will take care of IT-Governance only if legal provisions require it. As a consequence this is a critical factor for an implementation project.

In general, the explorative interviews show that the definition of objectives, the analysis of actual processes, the implementation of improvements and the monitoring of processes are the main steps for a combined IT-Governance reference model.

4.2 Design and discussion of the model using COBIT 4.1 and Val IT 2.0

By using the above mentioned findings the authors developed a model which is based on the "Implementation roadmap" published by [10] (see Figure 2).

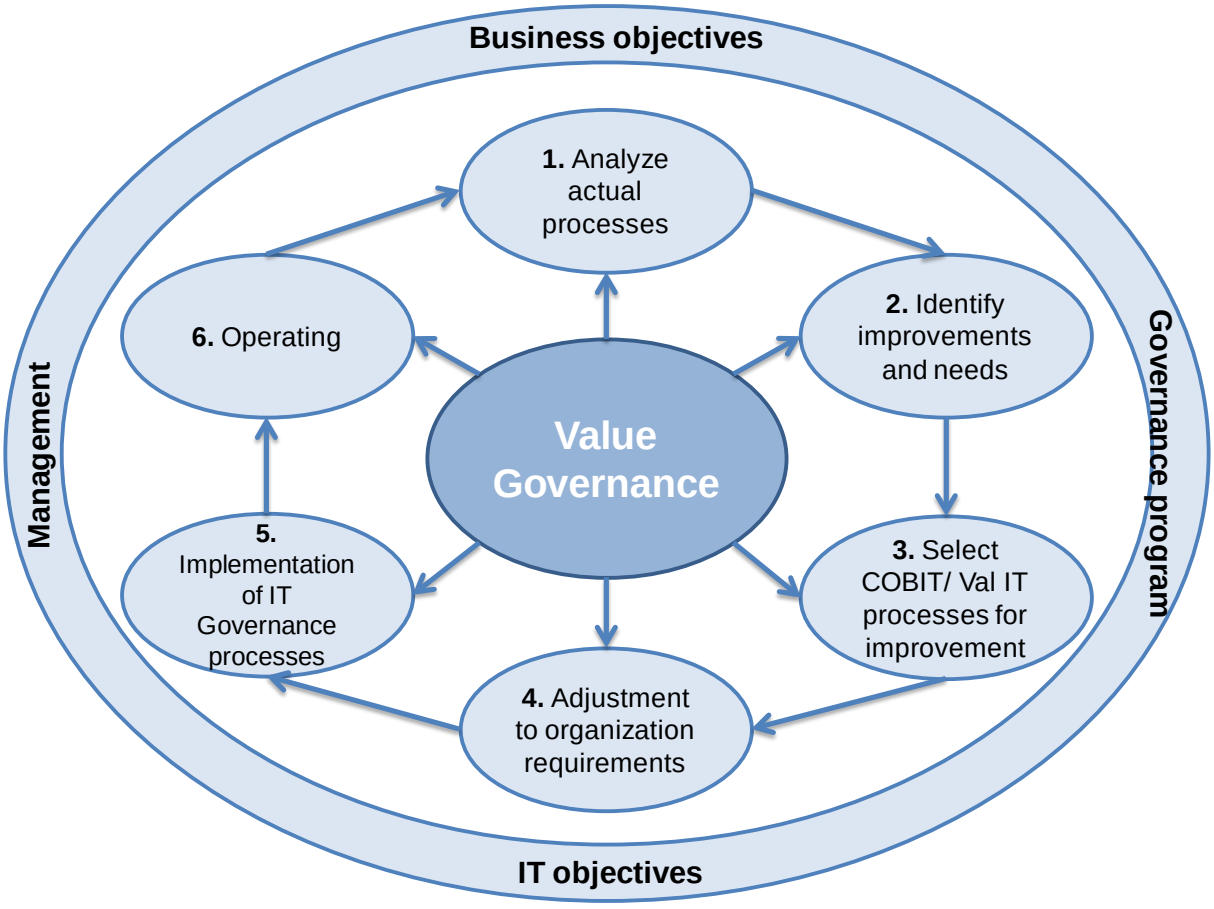

Figure 2: Model for an IT-Governance implementation with COBIT and Val IT

The model of this study uses the identified gaps of the "Implementation roadmap" which are identified during literature review and expert interviews and sets other priorities with a different design. The model is more abstract and universal than the road map by the ITGI.

The exterior circle, including the terms "Business objectives", "IT objectives", "Management" and "Governance program", represents the initial steps of an IT-Governance implementation or improvement project. The "Business objectives" are defined by the

management, reflecting companies´ and organizations' fundamental and long-term objectives. The "IT objectives" are derived from the "Business objectives" and represent the IT process strategies of a company or organization. The alignment of IT objectives to business objectives is based on the COBIT framework [9] as presented in section 2.1.

Management perspective is not considered in the "Implementation Roadmap" with this extensive definition. "Management" includes the support of an IT-Governance implementation project with the regular management tasks: planning, organizing, staffing, directing and controlling [18]. The management has to support the new or optimized IT-Governance approach with all its responsibilities and functions. The "Implementation roadmap" includes the management support only in phase 1. In consent with the experts, the awareness of the management functions is recognized as an extensive point, which has to be considered in each implementation step and not only in one specific phase. Another important point is the management of risks. Companies and organizations have to do identify risks and determine controls [10].

The most important point of the exterior circle is the "Governance program". The "Governance program" describes the strategy to achieve the business and IT objectives and the concrete processes which should be implemented or optimized. Processes must be prioritized and the planed performance level determined because an appropriate analysis of actual processes is only possible with defined objectives. Therefore, the "Governance program" has to determine the strategy of the IT-Governance implementation. In accordance to the "Implementation roadmap" the scope, resources and deliverables have to be defined and represent the baseline for the following implementation steps. The "Governance program" also implies whether the IT-Governance implementation depend on existing control processes or the design of new control processes. The interviews of experts pointed out, that most IT-Governance projects include the optimization of the existing processes. So, the "analysis of actual processes" is an essential step in an IT-Governance model which is individual in terms of specific requirements in each company or organization.

The exterior circle of the model is the foundation for the following implementation steps. Based on the interview of the experts, the circle represents a continuous effect and a basis on the other following IT-Governance implementation steps which have to be considered. This is a difference to the "Implementation roadmap" which only represents these points in the first phase.

The interior circle "Value Governance" integrates the consideration of the Val IT approach in each implementation step. In accordance to the opinion of the experts, it is essential to manage the IT-Governance implementation and process optimization anytime with a value governance view. It is appropriate to reflect each investment on its own as well as a part of the investment portfolio. The portfolio is determined by a value governance framework [11]. At this point, the initial Val IT approach is considered, however, the interviews of experts clarify that a benefit view should be integrated and that a generation of a comparative advantage is possible and has to be integrated into the model. The value estimation with benefits or the imagination of a comparative advantage out of an IT-Governance implementation is not widespread in practice.

The model presents the "Value Governance" as a continuous process. That means, that the business view, for example using business cases, portfolio management etc., have to be considered in each implementation step. The integration of the measurement of business

value or a comparative advantage in an IT-Governance program is not simple to achieve. But companies and organizations which can generate a comparative advantage out of IT investments do not only use the IT processes in a supporting function, they use the IT for value creation processes, directly. This is a difference to the “Implementation roadmap”, which considers the Val IT components only in specific phases or steps, but the “Value Governance” does not have this extensive and continuous character as in the presented model. The scale and the content of “Value Governance” have to be adjusted individually in each IT-Governance implementation project.

After analyzing the input factors, in the following the implementation steps will be described. The first step “Analyze actual processes” implies that the management pursues an optimization approach. If they prefer a “Greenfield approach”, this step will not be appropriate. With the assumption that the implementation is built upon actual processes, the critical processes have to be chosen and analyzed with a raster, determined in the “Governance program”. With the use of COBIT a maturity model for performance measurement of actual processes can be used [9]. The next step “Identify improvements and needs” includes the identification of gaps by comparing the performance of actual processes and the process objectives, determined in the “Governance program”. This step requires the interpretation of the analysis’ results, performed in the step before.

The step “Select COBIT/ Val IT processes for improvement” is strongly associated with the “Governance program”. The processes, which should be implemented, have to be chosen on the basis of the determinants of the “Governance program” and managed by “Value Governance”. In this step, the COBIT and Val IT components have to be planned in order to achieve the business and IT objectives. As pointed out by the experts, the “Value Governance” circle is very important, because the improvement projects have to be planned as an investment as part of a separate program and as a program as a part of a portfolio [11]. The strong integration of “Value Governance” is lacking in the “Implementation roadmap”. The next step “Adjustment to organization requirements” fulfills the requirements of companies and organizations to implement an individual solution. The COBIT and Val IT frameworks present best practices, supplying control objectives for processes, which have to be designed individually by each company and organization. The COBIT and Val IT processes have to be adjusted to companies´ and organizations’ individual needs and its specific environment. This step is supported by the experts who explain that an IT-Governance implementation always bases on an individual adaption of existing models. The individual adaption of best practices is significant in an IT-Governance implementation project for the achievement of a comparative advantage out of the IT-Governance implementation.

The next step is “Implementation of IT-Governance processes”. The developed processes, adjusted to companies´ and organizations’ requirements, have to be implemented in practice. The step “Operating” includes the monitoring of current processes in order to ensure sustainable performance improvement and the realization of business value [10].

After this step, the implementation steps will be repeated, determining a continuously approach. In this context, this model enables the IT-Governance implementation as a continuous improvement process, orientated on changeable business objectives and companies´ and organizations’ requirements.

4.3 Limitations

One limitation of our study relates to the low number of chosen, explorative interviewees. The demand in Val IT expertise in contrast to COBIT expertise is currently not present in practice. Therefore, it was difficult to find experts in both domains COBIT and Val IT. But the interviewed experts all have long-years of experience and are in top hierarchical positions in different leading consulting and advisory companies and organizations. Another limitation of this study is the missing practical examination of the model and a missing process model. This will be a next step in future research, including a case study.

5 Conclusion and Future Research

In this study a model is presented using a combined IT-Governance approach of COBIT and Val IT. The model describes the main steps of an IT-Governance implementation project. With the use of a structured literature review and by conducting explorative interviews with experts the aim of this paper is to build a bridge between academic literature and practical application. It offers an approach including the elements of “Business objectives”, “IT objectives”, “Management” and “Governance program” in an exterior circle and the “Value governance” in an interior circle, representing the continuous integration in each IT-Governance implementation step. The implementation steps “Analyze actual processes”, “Identify improvements and needs”, “Select COBIT/Val IT processes for improvement”, “Adjustment to organization requirements”, “Implementation of IT-Governance processes” and “Operating” are identified by the literature review and the experience of experts and are essential parts in an IT-Governance project. The discussed model presents an open approach for an IT-Governance implementation which has to be adjusted individually in each company and organization. A sustainable business value and comparative advantage is able to can be generated in the view of the experts but in practice often the reduction of costs is the main focus. Hence, this model presents the “Value governance” as an extensive and open component, which has to be designed individually.

The ITGI will publish a new version of COBIT in 2012, named “COBIT 5”, which exposure draft is presented in 2011. A main objective of this new version is the integration of inter alia the Val IT framework into one single framework [6]. Future research has to focus “COBIT 5” and examine their practical application.

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