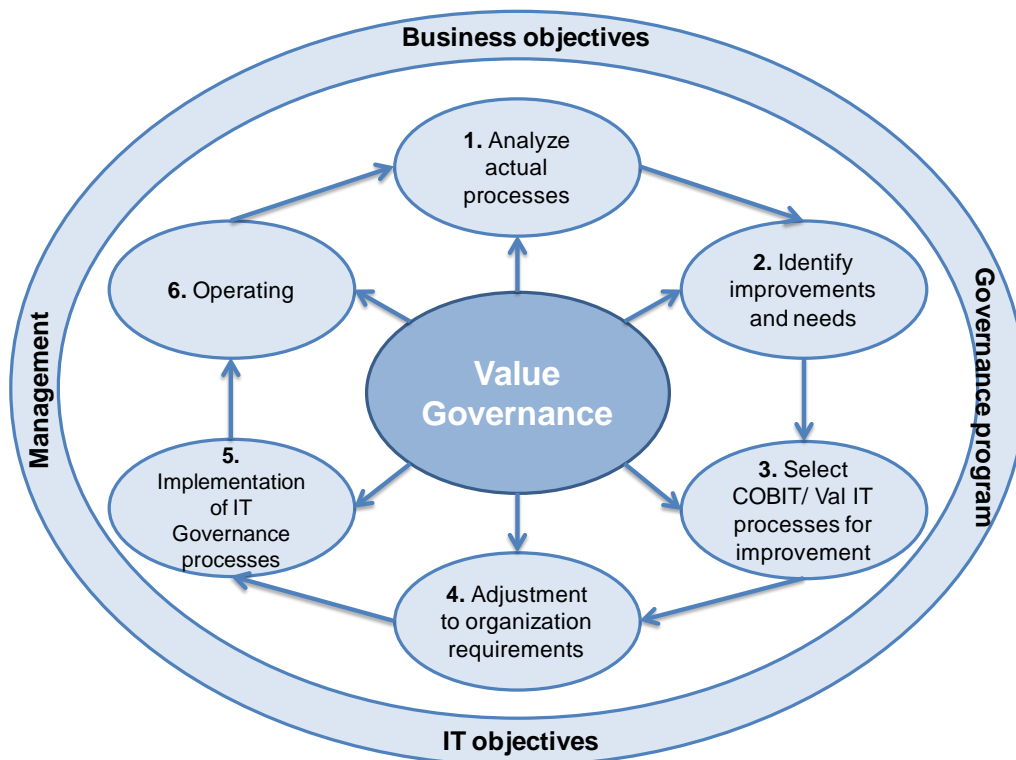


Discussion of an IT-Governance Implementation Project Model Using COBIT and Val IT

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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].

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 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.

6 References

- [1] Afzali, P; Azmayandeh, E; Nassiri, R; Shabgahi, GL (2010): Effective Governance through Simultaneous Use of COBIT and Val IT. In: Proceedings of the 2010 International Conference on Education and Management Technology (ICEMT). Cairo, Egypt
- [2] Anand, S (2006): Sarbanes-Oxley guide for finance and information technology professionals. 2nd Edition. Wiley, Hoboken, New Jersey, USA
- [3] Becker, J; Delfmann, P; Knackenstedt, R (2004): Konstruktion von Referenzmodellierungssprachen: Ein Ordnungsrahmen zur Spezifikation von Adoptionsmechanismen für Informationsmodelle. In: Wirtschaftsinformatik 46(4): 251-264

-
- [4] Becker, J; Knackstedt, R (2002): Wissensmanagement mit Referenzmodellen – Konzepte für die Anwendungssystem- und Organisationsgestaltung. Physica-Verlag, Heidelberg
- [5] Gaulke, M; Goeken, M (2010): Praxiswissen COBIT, Val IT – Risk IT. Dpunkt.verlag, Heidelberg
- [6] Gaulke, M; Goeken, M (2011): COBIT 5 – Überblick, aktueller Stand und erwartete Neuerungen. In: IT Service Management 15/2011:15-19
- [7] Gläser, J; Laudel, G (2010): Experteninterviews und qualitative Inhaltsanalyse. 4th Edition, VS Verlag für Sozialwissenschaften, Wiesbaden
- [8] Harries, S; Harrison, P (2008): Recognising the Need for Val IT: Identifying Tipping Points for Value Management. ISACA Journal Vol.3/2008: 1-2
- [9] IT-Governance Institute (2007): COBIT 4.1 – Framework, Control, Objectives, Management Guidelines, Maturity Models. Rolling Meadows, Illinois, USA
- [10] IT-Governance Institute (2007): IT-Governance Implementation Guide: Using COBIT and Val IT. 2nd Edition, Rolling Meadows, Illinois, USA
- [11] IT-Governance Institute (2008): Enterprise Value: Governance of IT Investments, The Val IT Framework 2.0. Rolling Meadows, Illinois, USA
- [12] IT-Governance Institute; Office of Government Commerce (2008): Alligning COBIT 4.1, ITIL V3 and ISO/IEC 27002 for Business Benefit. Rolling Meadows, Norfolk, USA
- [13] Johannsen, W; Goeken, M (2011): Referenzmodelle für IT-Governance. 2. Auflage, dpunkt.verlag, Heidelberg
- [14] Looso, S; Goeken, M (2010): Application of Best Practices Reference Models of IT-Governance. In: Proceedings of the 18th European Conference on Information Systems (ECIS). Pretoria, South Africa
- [15] Maes, K; De Haes, S; Van Grembergen, W (2011): How IT Enabled Investments Bring Value to the Business: A Literature Review. In: Proceedings of the 44th Hawaii International Conference on System Science, Hawaii.
- [16] Rohloff, M (2003): IT-Governance: Modell und ausgewählte Beispiele für die Umsetzung. In: Dittrich, K; König, W; Oberweis, A; Rannenber, K; Wahlster, W (Hrsg.), Informatik 2003 Innovative Informatikanwendungen, Band 1, Beiträge der 33. Jahrestagung der Gesellschaft für Informatik e.V.: IT-Alignment and -Governance. Frankfurt a.M..
- [17] Schermann, M; Böhm, T; Krcmar, H (2007): Forstering the Evaluation of Reference Models: Application and Extension of the Concept of IS Design Theories. In: 8. Internationale Tagung Wirtschaftsinformatik, Band 2, Karlsruhe
- [18] Schreyögg, G; Koch, J (2010): Grundlagen des Managements – Basiswissen für Studium und Praxis. 2. Auflage, Gabler Verlag, Wiesbaden
- [19] Van Grembergen, W; De Haes S (2009): Enterprise Governance of Information Technology. Springer Science + Business Media, New York
- [20] Van Grembergen, W; De Haes, S (2008): Implementing Information Technology Governance – Models, Practices and Cases. IGI Global, Hershey, New York

[21] Webster, J; Watson, RT (2002): Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS Quarterly* 26(2): xiii-xxiii

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