

IT Project Governance in the Public Administration – Development of a Checks and Balances Model and its first Validation Based on a Case Study

Research Paper

Konrad Walser

Bern University of Applied Sciences, Switzerland
E-Government-Institute
konrad.walser@bfh.ch

ABSTRACT

Further to literature references, and building inter alia of COBIT, this document provides an analysis of the control objectives in respect of IT project governance. It is clear from project management literature that insufficient emphasis is placed upon project governance in its own right and that currently governance in respect of larger projects, if indeed it is implemented at all, is enacted at too low a level within the hierarchy. This leads to the proposal of a dedicated project governance model oriented around corporate management which will manage via checks and balances between administration management, the department initiating a project, the finance department and project management. Leading on from this, an analysis will be undertaken of an IT project for the Swiss Federal Administration that got into serious trouble and was then cancelled. This analysis employs the 'checks and balances model' to examine the interactions in play within that project.

Keywords

IT governance, project governance, IT project governance, project governance model, checks and balances, project responsibility, project accountability.

INTRODUCTION

Problem

The scale and complexity of Information Technology (IT) projects in Public Sector Administration (PSA) are growing as the magnitude of e-government and networking expands. This increases project-related risks and the demands placed upon management (Smith, 2009). Furthermore, in many administration bodies, IT still does not enjoy the status it merits, either organisationally or in terms of the maturity of the alignment between the business and IT (Luftman et al., 1995). These are poor starting points and do not bode well for professional management of IT projects (Dunleavy et al., 2006) and for professionally structured IT project governance. IT management maturity in PSA and also in e-government is in many cases still at a low level (Sethibe et al., 2007). One of the reasons for this is that responsibility for IT within PSA is (still) frequently not aligned at the highest level of administration management. E-government projects and large projects in the administration sector entail networking and complexity in terms of business and IT operations and these in turn, seen from an IT governance perspective, bring about changes in the management of IT project governance. This is the starting point for the following discourse.

It must always be assumed that IT projects can fail (cf. for reasons not only associated with PSA: Alfaadel et al., 2012; Bronte-Stewart, 2005; Kühn et al., 2009; Mertens, 2008; The Standish Group, 1995). Failure of this kind can, however, be prevented via appropriate leadership/management and governance mechanisms. This points to the following research questions: Why do IT projects fail in PSA? What changes need to be made to IT management within a PSA context to reduce the risks of failure? From a governance point of view, what can be done to prevent IT projects failing in a PSA context? Literature is available on project governance (cf. Renz, 2007; Dinsmore and Rocha, 2012; Garland, 2009), and there is also an Australian/New Zealand standard (AS/NZS, 2012). However, in comparison to generic IT governance, there is much less literature available on more specific aspects of IT project governance, in particular with regard to PSA. There is no PSA specific IT project governance model. There is currently a research gap with regard to a PSA specific IT project governance model, and this document intends to fill it. This is particularly important in view of the fact that IT governance in PSA has not been the subject of much research in the past (Sethibe et al., 2007). If not otherwise stated, the text that follows when

talking about project governance in fact refers to the specific sub-area of IT project governance. In turn, both can be viewed as subsets of corporate governance (cf. Bowen et al., 2007).

Objective of this document

The aim of this document – taking literature as a starting point – is to build a governance model for IT projects in PSA as a central subset of IT governance (ITG) and of corporate governance for PSA. Furthermore, this document will extrapolate governance tasks and mechanisms, presenting them as a checks and balances model (cf Marnewick and Labuschagne, 2011) which involves administration management, the department initiating a project, the finance department and project management. This document goes further, taking the model as a basis for analysing a failed IT project and thus evaluating the checks and balances model for (IT) projects for its applicability in a case study environment. The checks and balances model may be used to systematically implement and improve IT project governance in PSA.

Methodology and content of this document

Following the article by Wilde and Hess, 2007 on the empirical investigation of research methods for information science, this research project draws upon various methods, such as: artefact construction to analyse real world phenomena ('checks and balances model' for IT governance), model construction to analyse a case study, and case study research. Based on the literature and using a semi-formal procedure (model building), a checks and balances model is developed for IT projects in PSA. The model is validated via a case study. The case study is based on a systematic evaluation of public-sector audit reports and press articles relating to a major project which failed in the Swiss Federal Administration. Since only one case study is presented, it may not be possible to draw generalisable conclusions out of it. We follow a qualitative and exploratory research path.

STATEMENTS ON THE TOPIC IN LITERATURE AND IN GENERAL DOCUMENTATION ON IT GOVERNANCE

Further reading on IT and e-government projects

In PSA, IT frequently lacks the status that it is accorded in the private sector. Often this is reflected by the fact that CIOs and IT heads in PSA are not integrated in the management teams of their administrations (cf., e.g., Noser, 2010; Lawry et al., 2007).

On the dual basis of principal agent theory and transaction cost theory, Burch, (2006) outlines and analyses hierarchy structures for management, project portfolio management, project portfolio controlling, project managers and project co-workers as well as areas where coordinated agreement is required between the various roles or the organisational units. In doing so, focus is put on the following roles or bodies: management, portfolio manager, project portfolio controller, project manager and project co-worker as well as line manager. The finance department is involved indirectly via controlling rather than directly in its own right. The various documents that are exchanged between the roles/bodies create information circuits which, with proper implementation, facilitate project governance.

Marnewick and Labuschagne, (2011) reach similar conclusions to those of Burch, (2006). They choose a pyramid to portray ideal interaction between various project management steering committees positioned at different levels within the hierarchical structure as follows: Organisational Board, Executive Committee, Programme Management Steering Committee, Project Management Steering Committee and the Project Manager. The hierarchically arranged committees are all interconnected in reciprocal pairs, each with input and output relations, either with specifying or reporting task profiles. However, this article does not address in further detail the nature of the information and information artefacts that are exchanged between the different levels. Burch, 2006 is more specific in this regard.

Governance frameworks and their relationship to IT project governance

COBIT 4.1 lists the 'Manage Projects' process PO10 (ITGI, 2007) in the Plan and Organise domain. This process, as is normal with COBIT 4.1, itemises 'control objectives' or inspection points for external or internal auditors. For reasons of space, these control objectives are not itemised here but further down the document in Figure 1. Here, they are assigned to the appropriate organisational units that are involved in IT project governance from the viewpoint of corporate management. These control objectives/activities are assigned in COBIT 4.1 in a corresponding RACI chart to the roles in question. The RACI chart defined by COBIT 4.1 (ITGI, 2007) for, inter alia, the 'Manage Projects PO10' process demonstrates that the CEO and the CFO (administration management (AM) with IT representation/CIO and Finance) must assume responsibility for projects, of course only for those that exceed a defined size. The CIO represented on AM is then able to exert influence from AM level on programme and project management. The degree to which the administration in question is decentralised or autonomous influences the distribution of power within IT management in PSA. Centralised and less autonomous administration entities are easier to manage and require different kinds of mechanism for business IT alignment than do heterogeneous, decentralised and autonomous administration entities (cf. Soares and Amaral, 2011 as well as Jannssen and

Joha, 2007). Here, influence must be exerted via management teams and audit functions to assure compliance with centrally specified standards, policies and directives. A conspicuous feature of the AZ/NZS, 2012 standard is that it is modelled on the ISO/IEC 38500 standard in respect of its governance model. The management processes are defined in the same terms as ISO/IEC 38500, i.e., Direct, Monitor, Evaluate. These should be understood as executive management governance tasks and processes for ICT projects as well. The model is already configured along these lines in ISO/IEC 38500. The draft of the AZ/NZS standard goes on to define the three management tasks in terms of the following principles: responsibilities, strategy, acquisition, performance, conformance and human behaviour for IT project management. These principles originate from the AS 8015 – 2005 standard (today ISO/IEC 38500).

The APM reference document 'A Guide to Governance of Project Management' (APM, 2005) can be characterised by various principles and domains, the last of which come with a certain number of questions. The question domains from APM, 2005 are as follows: Portfolio Direction (10 questions), Project Sponsorship (11 questions), Project Management (9 questions) as well as Disclosure and Reporting (12 questions). Selected principles from the APM reference document are as follows: The board has overall responsibility for governance of project management. The roles, responsibilities and performance criteria for the governance of project management are clearly defined. Disciplined governance arrangements, supported by appropriate methods and controls are applied throughout the project life cycle. All projects have an approved plan containing authorisation points at which the business case is reviewed and approved. Decisions made at authorisation points at which the business case is reviewed and approved. Decisions made at authorisation points are recorded and communicated. Members of delegated authorisation bodies have sufficient representation competence, authority and resources to enable them to make appropriate decisions. The board or its delegated agents decide when independent scrutiny of projects and project management system is required, and implement such scrutiny accordingly. There are clearly defined criteria for reporting project status and for the escalation of risks and issues to the levels required by the organisation.

Schools of thought relating to project management

Bredillet, 2008 and Kwak and Anbari, 2009 investigated schools, avenues of enquiry and theoretical areas associated with project management. The 'governance school' has played an important role since the Nineties by positing that governance determines the process of project management, while also determining the behavioural characteristics and success of projects. In addition, project marketing determines governance. The 'governance school' is one of the latest schools of thought to emerge in the field of project management. It can be concluded that clear governance structures can have a positive influence on the behaviour of the co-workers involved in a project as well as on the (decision-making) processes in the project management field. Furthermore, governance has a decisive role to play as a success factor for project management.

Conclusions relating to IT project governance literature

The theoretical Good Practice or Best Practice approaches summarised here, some empirically based, others purely theoretical approaches, are characterised primarily by the following facts that are relevant to the development of a dedicated model of checks and balances for IT project governance. A hierarchical structure of bodies/levels with decision responsibility is taken as a starting point, and these are equipped with information inputs and outputs for inter-communication. In one case (Burch, 2006), specific information or IT artefacts are named that can be interchanged between the various higher and lower levels of the coordinating hierarchical structure. A structuring process takes place on the basis of principles and controls formulated in (APM, 2005) as questions, understood to be 'controls' in ITGI, 2007/in the COBIT 'Manage Projects' process PO10 and furnished with a maturity model. APM, 2005 makes repeated reference to business cases, especially in respect of the authorisation points against which these are approved or examined. This includes that business cases must initially be approved by a body, irrespective of exactly how that body is constituted. In the case of COBIT process PO10, a maturity model is also built in behind the project management process (ITGI, 2007). To date, literature has not revealed any explicit instances of maturity models for project management purposes. Steering committees or management levels within a hierarchical relationship are not uniformly designated in the various different approaches. Burch, 2006 details the clearest example in the relationship between bodies and artefacts and in the specification/examination circuits. These conclusions are integrated in the following into a tailor-made reference work for IT project governance, which is designated as a 'checks and balances model'. This reference work puts central focus on decision-making behaviour and its dependency on the various departments, stakeholders and role bearers. In contrast to conventional IT project management literature, which usually postulates a management structure situated well down the hierarchy for governance or project management purposes (cf. Jenny, 2005; Wysocki, 2012), this reference work positions IT projects, as made clear in the following section, at the halfway point between a governance approach with a shareholder or stakeholder orientation and a project governance approach oriented on implementation (in line with Jenny, 2005; Wysocki, 2012).

DEVELOPMENT OF A PROJECT GOVERNANCE FRAMEWORK

Based on the theoretical fundamentals above, a checks and balances model can now be developed for both general and IT projects. This is based on a simplified set of roles (in contrast to ITGI, 2007) and on organisational relationship structures. The business case plays a central role in the process of working out which projects to implement and constitutes the object that project governance employs for initialisation and definition purposes. Further to this, the controls derived from ITGI, 2007 play an important role in the assignment of tasks to the different roles.

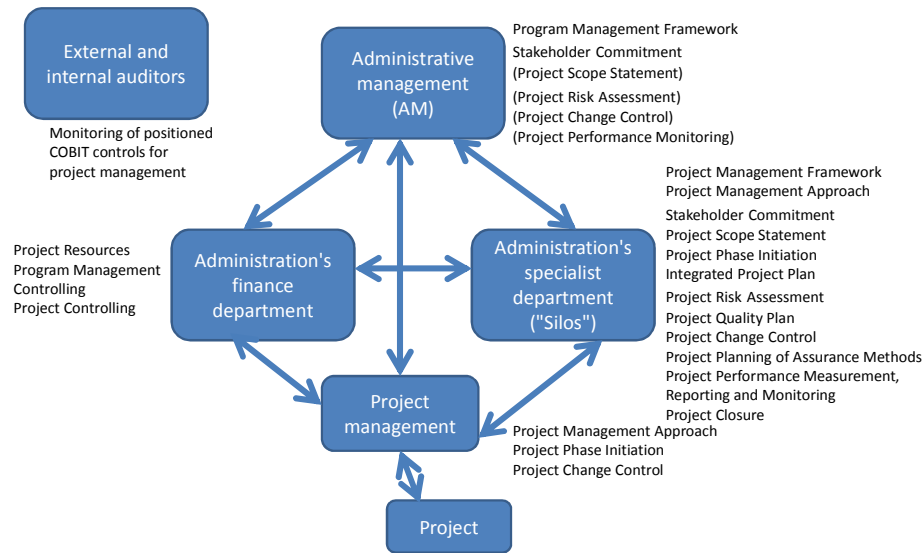


Figure 1: The IT Project Governance Model for Public Sector Administrations.

Figure 1 shows the assignment of the relevant COBIT IT controls from PO10 'Manage Projects' (ITGI, 2007). The relationships between the elements can be specified in greater detail, but space does not allow that here.

Subsequently, an attempt will be made to validate model application in a real example.

INSIEME CASE STUDY – IT PROGRAMME OF THE SWISS FEDERAL TAX ADMINISTRATION

Introductory remarks on this case study

In developing the case study, six public sector audit reports (two reports by the FinDel/Finance Delegation of the Swiss Councils and four reports by the Swiss Federal Audit Office (SFAO)) and 23 press articles (13 articles from the Swiss daily newspaper *Tagesanzeiger*, 6 articles from the *Neue Zürcher Zeitung* (NZZ), 4 articles from computer journals) relating to the Insieme project have been evaluated. From a methodological viewpoint, parts of these texts have been included in a separate document based on the problem context (IT project governance). After that, relevant text blocks for the case study were highlighted and arranged in a table. In a third step, the case study was written exactly based on the highlighted text blocks in the table (strictly a fact-based procedure). Several reviews have been executed to prove that all relevant parts were included in the case study and that all of these were mentioned in the sources. In addition, the case study makes reference to other sources. The facts processed directly from the audit reports and press articles were then completely integrated in the case study. They are shown in italics. As there was no meta-analysis of the facts, there was no need for deeper analytical study of the articles and audit reports contents. Content in the case study – not shown in italics – represents assumptions and/or interpretations, all based on the audit reports and press articles as mentioned above. The table in question (in German) and a more enhanced reference list can be requested from the author at any time. Because of space limitations, unfortunately not all the newspaper articles can be referenced in the text and the reference list.

Fundamentals of the Insieme case study

Since 2001, the Swiss Federal Tax Administration (SFTA) has been running a strategic project, relaunched on several occasions, called 'Insieme' [Italian for 'Together'] (cf. and in following section Dijkgraaf, 2007). Insieme stands for: a programme for innovation in the sectors IT, process and organisation systems within the Swiss Federal Tax Administration. By means of this project, according to its stated objective, the tax administration systems STOLIS (stamp tax) and MOLIS (value-added tax) of the two main departments of the SFTA are to be modernised and harmonised. It was also intended that this project would allow SFTA customers to benefit from an integrated portal for inputting and processing their tax

declarations e.g. in relation to stamp tax and value added tax. The project was cancelled in September 2012, after approximately CHF 155 million had been spent. A further CHF 5 million was needed to clean up after the project was cancelled.

The project had a long previous history. The implementation planned with the external company Unisys had to be cancelled back in 2007. This resulted in a legal dispute at the end of which the SFTA had to pay out once again. From autumn 2007 the project was revised and was spread across several stages with various projects, each sub-divided by type of taxation. In early 2008 the SFTA decided to implement the programme with the Federal Office of IT and Telecommunications as a new strategic partner.

General symptoms of an absence of IT project governance

Despite combined forces and common goals, critical factors emerged from 2007 onwards that continued to jeopardise the creation of a common overall IT system for the two main departments within the SFTA. Project organisation and project management were not harmonised and had to be improved in response to external pressure. Contractual and financial aspects were not clarified from the outset at steering committee level. The latter was by-passed on a regular basis whenever procurement questions were on the agenda. This culminated in the following requirement: all responsible departments were obliged to report to the steering committee. The person with overall responsibility as well as most project managers on the programme and the projects relating to *Insieme* were all specialists drawn from the main departments of the SFTA. They brought a wealth of specialist expertise with them that was essential for drawing up specifications and later also for the test phase; however, things never actually progressed to this point. Quite simply, the specialists involved lacked the requisite IT knowledge. This in turn meant that the employees of external IT companies were able to operate in a rather autonomous and unsupervised manner. The information they passed on to SFTA employees served their own interests better than it did those of the SFTA. The SFTA should have brought more in-house IT experts into play. Pressure came from outside that project progress should have been supervised by a project controller.

From the original 2005 funding commitment of CHF 71 million, an audit – which took place in 2008 – revealed that CHF 53 million was still available. This amount, as was already clear back then, was not going to be sufficient to implement the entire scope of the project.

There was constant talk about wheeling and dealing in connection with the programme and its projects. The following passages explain the internal mechanisms. The external companies were shameless in the way they exploited the situation. Often, innovative young people came up with solutions which were luxuries not capable of furthering the cause. Audits pointed to an overall impression that some companies put a greater emphasis on increasing turnover than they did on successful project completion. These external parties certainly knew how to reward themselves. They charged hourly rates of CHF 520, double what was standard within the SFTA. The over-stressed overall project leader was clearly not up to the task and was relieved of his post in February 2011, while continuing to receive a full salary for a further four months. He then received a golden handshake of CHF 200,000.

The Chief Official of the SFTA, suspended in the course of 2012 on suspicion of corruption, awarded illegal IT commissions for the *Insieme* project to two companies. His son was on the payroll of one of these companies. His son first worked at BSR & Partner, a company based in Canton Zug. In 2010 he switched to the Bern-based company involved in the project, where he assumed the post of Marketing Manager. Both companies were involved at that time as IT service providers and as agents for the provision of IT specialists. They were also involved in the *Insieme* programme.

As far as procurement was concerned, the mechanisms used were relatively simple. Contrary to the rules then in force, commissions with values in excess of CHF 50,000 were not signed off by a member of management, but by the head of the subordinate department in charge of procurement. At this point in time, that individual was a shareholder in a company that had supplied several hundred flatscreen monitors to the SFTA. Investigations revealed numerous non-transparent personal connections between supplier companies and the head of procurement.

It was established that these violations were based on a conscious decision taken by the director of the SFTA. Accordingly, considerable effort was made to cover up this evasion of procurement regulations. Furthermore, the former director of the SFTA was accused of creating an environment that promoted a general lack of proper care with the finances of the Swiss Confederation, and this in turn created a climate conducive to corruption.

The project manager demonstrably allowed himself to be won over by the numerous ideas put forward by the ever-changing external advisers.

Responsibilities not clearly defined on multiple counts

The government minister most recently responsible for supervising the Insieme field of operation had this to say on the subject: she stated that, just like her predecessor before her, she had warned the office director to produce correct and proper invitations to tender for the project, but that this had not happened. When pressed on this point, the minister had this to say: "What more could I have done? I am not the policewoman of this department." In the Swiss Federal Finance Department, somewhere between 6,000 and 10,000 contracts are concluded annually. "I cannot check all of them, nor do I wish to".

Then, in January 2012, after receiving further notifications from the Audit Office, she finally took Ursprung (the head of SFTA) to task: "I told him I was thoroughly dissatisfied that my instructions had not been followed", said Widmer-Schlumpf.

The following facts, that also appeared in the press, are cogent examples of how defined responsibilities and their intended purpose were being circumvented or sidelined: *On the same day, three different contracts, each with exactly the same wording, were concluded with the same company, costing CHF 147,000, CHF 185,000 and CHF 206,500. Amounts as high as these should have required official approval from a member of SFTA management; in this case the person who commissioned the projects was the same person who approved them (lack of segregation of duties).*

The Swiss Federal Audit Office also investigated whether the individual responsible in the Tax Administration had often lost track as this mammoth project unfolded. A large number of external advisers and software specialists profited from this management weakness. According to sources close to the Federal Government, at times more than 220 people were working on the IT project – more than 150 of whom were working for external consultancy and IT companies. Very serious management deficits came to light. In some cases the project management team was changed several times a year, and defined targets and the project architecture were altered.

Conclusions to be drawn from the case study

This case study clearly illustrates what can happen when IT project governance is poor or absent: malpractice and non-compliance with specifications, fraud and criminal machinations in regard to procurement. An absence of oversight (particularly at senior level), an absence of monitoring of procurement practice, unclear rules and/or deliberate flouting of rules applicable to procurement (non-conformance), no person directly involved in or with overall responsibility for taxpayer interests, rather self-interest in the project. Another criticism that can be levelled is that the principle of 'Balance' between conformance and performance as laid out in ITGI, 2007 had clearly not been implemented. It was about personal gain rather than cost optimisation in the interests of the taxpayer. For lengthy periods, there was no competent management supervision vested with appropriate powers; only when audit reports appeared did departmental management and its staff finally draw the correct conclusions. Had checklists been put in place earlier, a lot of what went wrong could have been avoided.

Similarly, supervision of the business case, to the extent that one had even been calculated, was poor to non-existent. Serious Principal Agent problems arose, for example in the interface zone between department management and IT management (management tended to be performed by external rather than in-house (IT) staff), or between departmental management and administration management, etc. The networking between external companies and internal staff was so interwoven that it was hard to get any real transparency (Von Burg and Stoll, 2012). Procurement legislation was knowingly violated on multiple counts during this project.

All this leads one to assume that management did not install a top-down management system nor any system of checks and balances that could deliver effective and efficient control, for example of external parties. Professional shortcomings on the part of SFTA staff made them potentially susceptible to bribery and corruption (hal, 2012). Furthermore, these same shortcomings also rendered it impossible for professional management to be exercised over external IT staff and external IT project managers.

Conclusions about project governance based on the analysis model

A key sentence in the Annual Report of FinDel of the Federation of Swiss Councils for the 2011 financial year (parliamentary services of the Swiss Confederation, 2012) relating to project governance in the Insieme project is as follows: "Fundamental questions on management and financial responsibility are not clearly defined within the SFTA, the project is taking too long, and fundamental elements of the project architecture are repeatedly being called into question." The need for checks and balances as recommended in this document, and the dangers of not having them, become evident from the Insieme programme and the latest developments from similar programmes, even if this insight is based purely on documentation without the benefit of internal knowledge of the project(s). Governance regulations do indeed exist for procurement tenders, but no-one within the organisation takes responsibility for ensuring they are implemented effectively. There are also mechanisms in place to detect and identify malpractice (internal departmental instructions, Swiss Federal

Audit Office, and the Finance Delegation of the Swiss Councils), but evidently no-one had assumed responsibility to undertake any form of remedial action. There is a deep abyss between departmental management (ministerial level) and administration management that cannot be overcome, and this has meant that a lack of transparency and abuse of office has gone unpunished for years. It is extremely alarming that there was no 'checks and balances' mechanism whatsoever with which proper control of the project could have been enacted. A project of this magnitude should have been managed directly by management of the government department and not by administration management.

The various aspects touched on here can also be explored as topics using the 'project controls' from COBIT 4.1. Aspects from the case study presented here have been added to the appropriate controls in the form of comments.

Because we focused on a single case study only, conclusions cannot be generalised. Further case studies have to be developed to prove the applicability of our checks and balances model for IT project governance. Further interviews with project participants of the Insieme project could be done to gain deeper insights, to verify the checks and balances model, and to differentiate and validate the project governance model discussed. A comparison could also be done with failed projects in PSA and in the private sector to verify different implications for the application of the model.

SUMMARY AND OUTLOOK

From the viewpoint of IT Project Governance, new approaches are required, particularly in regard to public-sector administration. This document maps out a project governance model with corresponding checks and balances. A case study has been used to verify and validate this model. Given the ever more complex and large-scale nature of e-government projects, the view dominant until now, whereby governance could originate from the entity initiating a project, is no longer applicable to the needs of PSA. It is of central importance in the context of the system of checks and balances between administration management, the administration entity initiating a project, project management and finance, that governance is given greater focus in research (as Sethibe et al., 2007 have been generally promoting for IT governance in PSA). Based on a single case study of a failed e-government project by the Swiss tax authorities, this document demonstrates how a non-functioning system of checks and balances between the aforementioned organisational entities can cause a major project to fail. It is evident that the problem starts with administration management. It did not have the requisite leadership qualities in the areas of IT and programme and project governance and it did not have adequate instruments for them. It is manifestly apparent that the standard HERMES procedure for projects within the Swiss Federal Administration does not adequately address these aspects. Furthermore, staff within administrations evidently lack the ability to evaluate complex IT projects and to reach professionally informed judgements (for example in relation to project requests and their business cases) whether the objectives are realistic and achievable, whether sufficient resources and expertise are in place and whether an efficient Business-IT alignment is assured. It can be concluded that the checks and balances model is useful and applicable. Further validation of this framework structure should be pursued via further case studies. It emerges from this document that the positioning of an IT governance model between governance motivated from outside the administration, project-internal governance and the middle layer with its strong management position in the context of project governance, can point the way forward for further research into a checks and balances model for IT project governance in PSA. This also addresses how to address such topics within administration management.

REFERENCES

1. Alfaadel, F., Awairdhi, M. and Al-Zyoud, M. (2012) Success and Failure of IT Projects: A Study in Saudi Arabia. In: *Proceedings of Conference: Recent Researches in Applied Computers and Computational Science*, Rovaniemi, 2012, 77-82.
2. APM (2005) A Guide to Governance of Project Management. Association for Project Management. Buckinghamshire/UK.
3. AS/NZS (2012): Corporate Governance of Projects involving Information Technology Investments – Interim Australian/New Zealand Standard™ – 8016/Draft for Public Comment Australasian/New Zealand Standard. http://www.xyz.au.com/members/intelligence/pdf_files/DR_08145.pdf (as of 2012-12-25).
4. Bowen, P.L., Decca Cheung, M.-Y. and Rohde, F.H. (2007) Enhancing IT governance practices: A model and case study of an organization's efforts, *International Journal of Accounting Information Systems*, 8, 3, 191-221.
5. Bredillet, C.N. (2008) Exploring Research in Project Management: Nine Schools of Project Management Research (Part 6), *Project Management Journal*, 39, 3, 2-5.
6. Bronte-Stewart, M. (2005) Developing a risk estimation model from IT project failure research. *Computing and Information Systems Journal* 9 (2005) 3.

7. Burch, S. (2006) Project management-governance – A fundamental introduction. Term paper, Institute for Finance and Controlling, University of Zurich.
8. Dijkgraaf, H. (2007) Die Eidgenössische Steuerverwaltung modernisiert Prozesse, Organisation und IT, *eGov Präsenz*, 1, 34-36.
9. Dinsmore, P.C. and Rocha, L. (2012) Enterprise Project Governance – A Guide to the Successful Management of Projects Across the Organization. AMACOM, New York et al.
10. Dunleavy, P.; Margetts, H.; Bastow, S.; Tinkler, J. (2006) New Public Management Is Dead – Long Live Digital-Era Governance, *Oxford Journals Social Sciences, Jnl. of Public Admin. Research and Theory*, 16, 3, 467-494.
11. Garland, R. (2009) Project Governance – A practical guide to effective project decision making. Kogan/Page, London/Philadelphia.
12. hal (2012) Insieme: Schickes Boot für ESTV-Informatikchef? <http://www.inside-it.ch/articles/29473> (as of 2012-12-25).
13. ITGI (2007) COBIT 4.1 – Framework, Control Objectives, Management Guidelines, Maturity Models. IT Governance Institute, Rolling Meadows.
14. Jannssen, M. and Joha, A. (2006) Motives for establishing shared service centers in public administrations, *International Journal of Information Management*, 26, 2, 102-115.
15. Jenny, B. (2005) Projektmanagement, vdf-Verlag, Zürich.
16. Kühn, A., Walser, K. and Riedl, R. (2009) Beziehung zwischen IT-Erfolgsfaktoren und IT-Risikomanagement im E-Government, *HMD – Praxis der Wirtschaftsinformatik*, 46, 268.
17. Kwak, Y.H. and Anbari, F.T. (2009) Analyzing Project Management Research: Perspectives from Top Management Journals, *International Journal of Project Management*, 27, 5, 435-446.
18. Lawry, R., Waddell, D. and Singh, M. (2007) Roles, Responsibilities and Futures of Chief Information Officers (CIOs) in the Public Sector, *Proceedings of the European and Mediterranean Conference on Information Systems 2007 (EMCIS2007) – June 24-26 2007*, Polytechnic University of Valencia, Spain.
19. Luftman, J., Papp, R. and Brier, T. (1995) „The Strategic Alignment Model: Assessment and Validation”. In: *Proceedings of the Information Technology Management Group of the Association of Management (AoM) 13th Annual International Conference*, Vancouver, British Columbia, Canada, August 2-5, 1995, 57-66.
20. Marnewick, C. and Labuschagne, L. (2011) An Investigation into the Governance of Information Technology Projects in South Africa, *International Journal of Project Management*, 29, 6, 661-670.
21. Mertens, P. (2008) Fehlschläge bei IT-Großprojekten der Öffentlichen Verwaltung – ein Beitrag zur Misserfolgsforschung in der Wirtschaftsinformatik. [http://ibis.in.tum.de/mkwi08/17_ IT-Risikomanagement_-_IT-Projekte_und_IT-Compliance/01_Mertens.pdf](http://ibis.in.tum.de/mkwi08/17_IT-Risikomanagement_-_IT-Projekte_und_IT-Compliance/01_Mertens.pdf) (as of 2012-07-31; created 2008).
22. Noser, R. (2010) „Ich plädiere für einen nationalen CIO mit weitreichenden Konsequenzen“, *eGov Präsenz*, 1, 9-11.
23. Parlamentsdienste der Schweizerischen Eidgenossenschaft (2012) Die Finanzdelegation der eidg. Räte veröffentlicht ihren Tätigkeitsbericht 2011. [http://www.parlament.ch/d/mm/2012 /Seiten/mm-findel-2012-04-20.aspx](http://www.parlament.ch/d/mm/2012/Seiten/mm-findel-2012-04-20.aspx) (as of 2012-07-31; created 2012-04-20).
24. Renz, P.S. (2007) Project Governance – Implementing Corporate Governance and Business Ethics in Nonprofit Organizations, Physica-Verlag, Heidelberg.
25. Sethibe, T., Campbell, J. and McDonald, C. (2007) IT Governance in Public and Private Sector Organisations: Examining the Differences and Defining Future Research Directions: http://canberra.edu.au/researchrepository/file/f33bed1a-dfed-0982-2f89-e60282e798c2/1/fulltext_published.pdf (as of 2013-01-27; created 2007).
26. Smith, R.F.I. (2009) Organizing for E-Government: In search of effective ICT governance in Australia. <http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan044286~1.pdf> (as of 2013-01-27; created 2009-12).
27. Soares, D.; Amaral, L.: Information Systems Interoperability in Public Administration: Identifying the Major Acting Forces through a Delphi Study, *Journal of Theoretical and Applied Electronic Commerce Research*, 6, 1, 61-94.
28. The Standish Group International (1995): CHAOS Report.
29. Von Burg, S. and Stoll, M. (2012) So liefen die Deals in der Steuerverwaltung. <http://www.sonntagszeitung.ch/home/artikel-detailseite/?newsid=222016> (as of 2012-08-02).

30. Wilde, T. and Hess, T. (2007): Forschungsmethoden der Wirtschaftsinformatik – Eine empirische Untersuchung, *Wirtschaftsinformatik*, 79, 4, 280-287.
31. Wysocki, R.K. (2012) *Effective Project Management – Traditional, Agile, Extreme*, Wiley, Indianapolis.