Project management auditing: a study of the main practices adopted

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ABSTRACT

This paper aims to present the most important studies on project management auditing and to identify the differences and similarities between the approaches adopted in these studies. It is a bibliographical, exploratory qualitative research. We identified the similarities and differences between the approaches adopted. From the results, we concluded that project management audits do not count with a specific literature or defined procedural aspects. This paper corroborates this fact by pointing out the diversity of methods used to conduct project management audits.

Keywords: Project Management, Strategic Projects, Audit.

1.   INTRODUCTION

During the past years, the three government spheres have spent a large amount of money in big events, such as the 2014 FIFA World Cup and the Rio 2016 Olympics and Paralympics, besides strategic projects on Defense.

The big strategic projects that the Federal Government has implemented and managed do not indicate any rule, legislation, or instruction

to guide the audits carried out by the External Control, Intern Control of the Executive power, or by the intern audit unit in the structure of the agency responsible for the main strategic plan. Thus, the audit of project management is still a new territory, since a definitive approach that combine project management and audittechniques does not exist.

In this context, we highlighted the considerable increase in the budgetary resources allocated for investments in the Defense sector: perspectives point out that subsidies will surpass R$140 billion in the next twenty years. The particularities found in this sector of the public policies of the Federal Government range from contractual forms, which may involve various governmental actors, to arrangements and obligations stated by specific legislation (BRASIL, 2014).

Therefore, based on a bibliographic and document review, this paper aims to present the most important studies on project management auditing and identify the differences and similarities between the approaches adopted in the studies. The secondary objective of this research is to provide a theoretical background to support the management of big strategic projects to improve the public administration performance and to effectively provide information to society as a whole through audits.

This type of study is important and necessary because it intends to contribute to the transparency process of the management acts performed by public actors, to the quality of public expenditures, to the continuous evaluation of results, and to goal achievement concerning a big project management.

2. IMPORTANT STUDIES ON PROJECT MANAGEMENT AUDITING

2.1 MCDONALD'S STUDY

Studying audits in project management software, McDonald (2002) highlighted that the goals of project audits are the following: to develop a sound project plan in a reasonable amount of time; to reasonably ensure that the team and the project manager have applied the proper technique to develop a successful project; to clearly identify the highest risks the project may face; to estimate the possible chances of success; and, finally, to identify what can be done to lead the project in the most efficient way concerning the schedule, the resources, the costs, and the quality.

McDonald verified that project management audits tend to concentrate on management processes and methods related to

people instead of concentrating on business processes or technical processes.

2.2 GERMAN INSTITUTE OF INTERNAL AUDITORS'S STUDY (DIIR)

The German Institute of Internal Auditors (DIIR) (2008) emphasizes that the rules related to the best practices in project management, such as PMBOK®, PRINCE2 , or ICB may be the criteria of an audit.

It presents three types of audit: project management, business case and business requirement. The project management audit includes the analysis of the organization, processes, project products, and portfolio management. It checks if the project management or the portfolio management is adequate to administrate project activities, to ensure that time, budget and quality goals can be reached. It examines the organization, the plans, the controls, the particularities and the operational measurement of the project management units concerning efficacy and efficiency. If the management presents weaknesses, the audit makes appropriate recommendations for improvement.

The business case audit includes the evaluation of the efficacy and efficiency of the processes that prepare the business case to a project. It checks if the project justification is properly based on sufficiently valid assumptions, such as analytic calculation, and commercial or economic criteria.

Table 1: Project Audit Universe

AUDIT AREAS and PROJECT STAGES	STAGE I INITIATION	STAGE II PLANNING	STAGE III EXECUTION	STAGE IV COMPLETION	STAGE V POST IMPLEMENTATION
I. AUDIT AREA PROJECT MANAGEMENT					
1. Project organization	Project sponsor/stakeholder	Plan, project, organization, project manager	Project organization, project roles	Project organization, project roles	Dissolution of project organization
2. Integration management	Project mandate, provisional project charter, Open-issue-list	Project plan, project structure plan, project management plan, management of open issues	Project management meetings, steering committee meetings, documented decision, management of open issues	Transfer of open issues to line	Ideas for follow-up projects
3. Content and scope management	-	Change management plan, change request form	Change requests, updating of project plan	Transfer of project results to line	-
4. Time management	-	Milestone plan, activity plan and sequencing, resources and work packages, critical path	Time management, compliance measures, updating of plans	-	-
5. Cost management	-	Cost plan	Cost-benefit equation (target-performance comparison, forecast)	Completion diagram	Historical cost-benefit analysis, margin/variance analyses
6. Quality and test management	-	- Quality plan	Quality review reports, approvals	Quality review reports, approvals	-
7. Human resources management	-	Human resources requirements plan, project team list	Recruitment, human resources management	Dissolution of project team	-
8. Communication management	-	Meeting list, communication plan, project documentation system, configuration plan	Project management meetings, minutes, workshops, project results documentation	Knowledge transfer (transfer to line)	Lessons learned
9. Project reporting	-	Templates for reports, KPIs for the project	Project progress report	End stage report	-
10. Risk management	-	Risk management plan, initial risk list	Risk management, updating of risk list	-	-
11. Procurement management	-	Procurement plan, quotations	Contracts, accounting, performance of the contract	Completion accounts	-
II. AUDIT AREA BUSINESS CASE					
Business case	Project objectives, analyses, assumptions	Business case, calculations, approvals, budget approvals	Additions to the business case, change to assumptions	-	-
III. AUDIT AREA: BUSINESS REQUIREMENTS					
Business requirements	-	Results provided by the project teams, e. g. analysis of the status quo, plan, drafts	Results provided by the project teams, prototypes, test plans, tests	Final results provided by the project teams	Post implementation results

Source: DIIR (2008)

The goal of the business requirement audit is to evaluate the business requirements of the project and their implementation as part of the project work. Concerning an approved business case, this type of audit checks if the definition of the business requirements and its subsequent implementation are appropriate and if they are in accordance with the legal, regulatory or specific guidelines of the company.

According to DIIR (2008), the universal structure of project audits is based on management processes presented in the PMBOK®. Within the important types of audit, there are auditable audit objects, which are specific for each stage of the project. The audit areas, project stages and audit objects together are the project audit universe, as set forth below in Table 1:

According to DIIR (2008), the matrix shows a minimum structure only.. Other audit objectives may be included depending on the project content, schedule, and special characteristics and circumstances, on specific factors of the organization, and on the audit work in progress.

Reusch (2011) corroborates this by mentioning that, in comparison with PMBOK's® project management standards and good practices, the project audit to be performed need to add some knowledge areas and process groups. The author highlights that, concerning PMBOK®, two knowledge are missing: project funding and social responsibility. He states that the development of project management standards and good practices must fill those gaps as fast as possible. He emphasizes that auditors can promote a higher development of rules on project management when they go beyond the already existing project management standards and good practices.

2.3   CLELAND AND IRELAND'S STUDY

According to Cleland and Ireland (2012), project audits vary according to the need of comparing the plan and the effective execution practices. Planning them ensures that the relevant areas are audited by comparing each of them with the plan, the standard, the process, the procedure or the practice of the project.

The authors mention that the constitution of the audit team depends on the purpose of the work. Besides, the success of the work is connected to the team's skills, knowledge and ability. Additionally, the authors emphasize that the auditors do not need a technical qualification in project management. Table 2 presents the types of project audits with their respective purposes and expected results: The authors emphasize that the ways to conduct audits are similar, because they are designed to identify the activities that complies with the project basic documentation and the differences between what is in the plan and what was actually done.

2.4   YAMEI'S STUDY

Yamei (2013) presents important critical control points concerning audit types that are

Table 2:
Types of project management audits

TYPES OF PROJECT AUDIT	PURPOSES	RESULTS
Progress	Review of the project progress from three perspectives: schedule, budget disbursement and technical aspects.	Comparison between the planned progress and the effective completion from the three perspectives.
Process	Review of the project team's practices to ensure compliance with the process and its efficiency to achieve goals	To ensure that the process will produce the results expected.
System	Review of the technical or administrative system, e.g. the communication plan, which is a supporting operation or role of the project.	Information on the adequacy of the supporting system of work in the project. To ensure the system works in compliance with the documented orientation.
Product	Review of the technical completion of the project in the product construction, and if the latter complies with the plan.	To report the degree of convergence between the technical parameters and the work parameters.
Contract	To verify the compliance with contractual requirements and if the project team is carrying out the work established in the contract.	Report of the level of fulfilment of the contractual requirements.
General	Review of every aspect of a project and a comparison between the planned completion and the actual completion.	Report of the level of fulfillment of the requirements to complete the project.
Special	Review of the specific parameters of a project to determine the project status and progress. A special audit occurs due to a loss of confidence in the project completion.	Report focused on the project progress and status. It may present some recommendations to improve the actual status of the project.

Source: Cleland and Ireland (2012)

related to every project management process, as follows:

- The audit of the investment decision--making process must occur in the project planning stage, with a special focus on the project proposals, the feasibility study, and the project approval to avoid inconvenient decisions;

- The audit of project proposals verifies whether the project establishment is real and whether the procedures of report delivery are complete and relevant;

- The audit of the feasibility study of the project focus on the prevention or reduction of errors in policy decisions and determines the validity of the conclusions about the feasibility. At this stage, the main forms of audit are scrutiny and the comparative analysis;

- The management audit in project planning must check the technical conception of the project, and include the cost budget, the planning itself, and bidding and contract-related aspects;

- The audit of the project conception verifies the implementation of bidding procedures (legality of project contracts and specific regulation) and whether the companies involved have the necessary qualifications. At this stage, the most important task is to identify unjustified problems that result in waste or excessive changes in the project, which may increase the costs or difficulties to control it;

- The audit of the cost budget examines if the budget is reasonable, controlled, and adjustable, and if it meets the requirements of the standards applicable;

- Auditing in the project implementation stage helps verify the development, the quality and the cost management of the project. It must be based on the conception of documents, contracts, and annual plans; and

- The audit conducted in the project delivery stage evaluates the importance of the completion and the economic benefits of the project. It manages surplus materials and equipment, and the project data transfer and archiving. It also verifies if the accounting related to the project completion includes information on the project budget execution, the funding sources, if the construction cost was reasonable, and if the project delivery and schedule format was correct.

Finally, Yamei (2013) highlights that the project audit results need a deep analysis, since the audit work does not determine the origin of the existing problems.

2.5 BRAZILIAN NATIONAL STANDARDS ORGANIZATION – ABNT

Project auditing is focused on the dynamics of project decisions and governance controls to fulfill the organization's superior strategies, which are defined in a program, portfolio or in a project-focused corporate policy.

According to the NBR 12677(2014), the organization must conduct intern audits at previously planned periods to determine whether the project management system meets the planned dispositions and requirements, and if it was kept and put into practice.

According to NBR 12677 (2014), the project governance principles to audit project management systems are: continuous business justification, accountability, performance, conformity, emphasis on the project management, and experiential learning. Regarding these principles, the upper management should prove its commitment with the establishment, the implementation, the operation, monitoring, the critical analysis, the maintenance and the improvement of the project management system by means of a documented and periodically validated tool.

The business case is a tool used to judge whether the project must continue or not. The client's requirements must be in the business case. This tool must be documented and updated throughout the project life cycle.

According to NBR 16277(2014), the types of project audit presented in Table 3 help to better meet the various demands on a project audit, regarding the audit nature, its results and the report production.

The time to conduct each type of audit depends on the needs of the organizations; each of them choses the appropriate type to apply and its periodicity.

2.6 SHARBATOGHLIE AND SEPEHRI'S STUDY

According to Sharbatoghlie and Sepehri (2015), in a traditional approach to project management, the project activities are rarely monitored and audited and, still, in a period of time that may last weeks or months. The authors add that the project management audit carried out in a considerable lag can create inefficiencies, such as delays and budget bust.

Thus, Sharbatoghlie and Sepehri (2015) emphasize that a project management model under continuous auditing can significantly improve the ability of the project management team to monitor project activities.

The new continuous auditing approach is the introduction of a dynamic and advanced system of intern audit that aims to identify, capture and critically store data, information and knowledge generated during the project execution. Using data, information and the knowledge available, public and private companies and government agencies can monitor and report their control variables on a continuous basis.

Table 3:
Types of project management audits

TIPO	OBJETO DA AUDITORIA	CRITÉRIOS DE VERIFICAÇÃO	
		ESTRATÉGIAS ORGANIZACIONAIS	REQUISITOS DOS CLIENTES
Auditoria da responsabilidade em projetos	Análise dos processos decisórios e suas consequências em termos de resultados	Grau de realização dos objetivos do projeto	Grau de satisfação do cliente
Auditoria de aplicação das estratégias em projetos	Alinhamento dos projetos às estratégias organizacionais	Grau de realização dos objetivos estratégicos da organização	Não se aplica
Auditoria de aquisições em projetos	Uso dos recursos nas aquisições necessárias aos projetos	Grau de eficácia no processo de aquisições do projeto	Não se aplica
Auditoria de desempenho em projetos	Avaliação de resultados financeiros em termos de competitividade e estratégias econômicas	Grau de desempenho do projeto em relação aos resultados financeiros esperados	Não se aplica
Auditoria de conformidade em projetos	Questões de qualidade em nível de excelência e regulação nas boas práticas do gerenciamento de projetos	Grau de efetividade dos acordos de nível de serviço do projeto	Atendimento às cláusulas contratuais

Source: NBR 16277 (2014)

3.   ANALYSIS

In the studies by DIIR (2008), Cleland and Ireland (2012), and ABNT, by means of NBR 16277 (2014), we observed the adoption of a structure that gathers the audit types with objects, purposes, and criteria to conduct works and achieve the expected results. McDonald (2002), Yamei (2013), and Sharbatoghlie and Sepehri (2015) presented doctrinal aspects about the conduct of project management audits focused on the general goals of the audit, the critical control points at each stage of a project, and on the development of continuous audits.

McDonald (2002) focused on defining the main goals of the project management audit. DIIR's project audit universe (2008) consist of three main audit types that address the project management, the business case, and the business requirements, respectively. Their objects are the project stages and the areas to be audited according to the statements of the project plan. DIIR's research (2008) presented three audit types arranged in a matrix that includes the stages of a project.

Similarly to McDonald, Cleland and Ireland (2012) highlighted the objectives of a project management audit. They described the importance of an appropriate audit planning and the constitution of the audit team. Compared to DIIR's study (2008), Cleland and Ireland (2012) presented seven types of project mana-

gement audit their respective purposes and expected results. They focused on the progress, the process itself, the system, the product to be delivered, the contracts, and the general and specific aspects of the project. However, the audit types proposed were not organized in accordance with the stages of a given project.

Yamei (2013) highlighted that the results of a project management audit need a deep, thorough analysis, since audit works do not determine the origin of the problems. The author clearly presented the main critical control points of each stage of the project.

Evidences Yamei's study (2013) suggested types of audit to work as control points in project management. Such audits are related to the following topics: decision-making process of the project, proposals, project feasibility, planning, design, cost, implementation, and product delivery.

NBR 12677 (ABNT, 2014) presented six governance principles that should be observed during audits. Similarly to Cleland and Ireland's and DIIR's studies, ABNT presented five types of project management audit, but they are not organized according to the stages of a project. It classified the audits in accountability, strategy, procurement, performance, and conformity audits. These audit types indicate their respective objects and criteria to help conduct the audit works.

Sharbatoghlie and Sepehri (2015) did not address the appropriate audit types for each

stage of a project. However, they warned about the need of a minimum period of time between project management audits to avoid inefficiencies in the project conduction. In this situation, the continuous audit would be an important tool to the project management. NBR 12677 (2014) goes in the same direction. It advises organizations to perform internal audits at previously planned periods to determine if the project management system complies with the planned arrangements.

4.   FINAL REMARKS

This research gathered an important and appropriate large theoretical background that will help the implementation of good practices and management procedures in the project management scope. It also provided information to society as a whole through the audits performed.

We identified the similarities and differences between the approaches adopted. From the results obtained, we concluded that project management audits do not count with a specific literature or procedural aspects defined. This paper corroborated this fact by pointing out the diversity of methods used to conduct project management audits.

Project management audit is a complex task with many nuances, variations, objectives, and forms of conduct. This complexity arises from the project to be carried out and from the good practice of project management chosen.

We cannot guarantee that this research has covered all the important points required for an efficient project management audit. Thus, we suggest the extension of this study based on references of other good practices of project management not described in the PMBOK®.

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