A Three Phases Model To Transform Traditional Project Management Offices To Become Agile

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Abstract:

Navigating the complexities of integrating Agile methodologies within traditional Project Management Offices (PMOs) presents a significant challenge, often marked by misalignments. This issue is particularly pronounced across various industrial sectors, where the relentless pace of technological advancement exacerbates the struggle for seamless integration. The primary objective is to bridge the existing gap and illuminate the effectiveness of traditional PMOs in the context of Agile project management. Using a mixed-method approach, this research aims to unravel the multifaceted nature of Agile Project Management Offices (APMOs). Through comprehensive literature reviews, the study seeks to provide a nuanced understanding of the challenges encountered and the opportunities available for traditional PMOs transitioning to Agile methodologies. At the heart of this research is the development of a tailored Three-Phases Model designed to facilitate the transformation of traditional PMOs into Agile PMOs. This model offers practical insights and strategies, aiming to enhance the capability of traditional PMOs to manage Agile projects effectively. Ultimately, this research strives to contribute to the enhancement of project management practices and promote organizational agility by addressing the specific challenges of integrating Agile methodologies within traditional PMOs.

Keywords: Agile; Transformation Model, Project Management Office, PMO.

1. Introduction: Adapting to Agile Methodologies in Dynamic Industries

In today's dynamic business environment, industries such as finance, oil and gas, and retail are increasingly dependent on Agile project management. These sectors, characterized by their complication and rapid technological evolution, find Agile approaches essential to meet the swiftly changing market requests [1].

Agile methodologies have become indispensable in these industries, allowing organizations to adapt quickly and efficiently to new challenges and requirements. For instance, financial institutions must continuously innovate to stay ahead of regulatory changes and customer expectations. Similarly, the oil and gas sector relies on Agile to manage large-scale projects and respond to environmental and market fluctuations. However, the transition to Agile is not without its obstacles. Traditional project management structures, designed for more linear and predictable workflows, often struggle to accommodate the flexibility and iterative nature of Agile. These conventional frameworks can hinder the effective supervision and governance of Agile projects, leading to misalignments and inefficiencies. Consider the retail sector, where customer preferences and market trends shift rapidly. Retail companies adopting Agile can quickly pivot their strategies to meet consumer demands, launch new products, and optimize supply chains. Yet, they often encounter resistance from established Project Management Offices (PMOs) accustomed to traditional project management practices.

To address these challenges, organizations must rethink and redesign their PMOs to support Agile methodologies. This involves training staff in Agile principles, restructuring teams to foster collaboration, and implementing new tools and processes that align with Agile practices. While Agile project management is crucial for staying competitive in complex and fast-paced industries, traditional PMOs must evolve to support this transition effectively. By embracing change and adapting their structures, organizations can better navigate the challenges of Agile implementation and harness its full potential. The transformation from traditional to Agile PMOs can be compared to the shift from typewriters to computers in an office setting. Just as the adoption of computers required new skills and processes, so too does the transition to Agile necessitate a comprehensive overhaul of existing project management frameworks.

Traditional Project Management Offices (PMOs) were established to operate within conventional project management frameworks. However, they now face a critical juncture due to the growing gap between their established practices and the Agile-oriented projects they are expected to oversee. This increasing disparity highlights significant questions about the effectiveness of traditional PMOs in the context of Agile project management. The core misalignment between traditional PMO structures and Agile methodologies necessitates a reevaluation of their roles and strategies. PMOs are entities tasked with establishing and maintaining project management standards. They are keepers of documentation, performance metrics, and ensure that projects are delivered on time and within budget [2]. Their responsibilities include strategic planning, resource allocation, project governance, and personnel training [3]. The functions and responsibilities of PMOs can vary significantly across organizations. According to the Project Management Institute, PMOs are categorized based on their position and effect within the pyramid [3]. This categorization helps in understanding the diverse roles PMOs play in different organizational contexts. Given their traditional roles, the effectiveness of PMOs in Agile environments is under scrutiny. Agile projects demand flexibility, iterative progress, and rapid adaptation—traits that traditional PMOs might not inherently possess. This prompts a need for PMOs to evolve and align their functions with the principles of Agile project management. The transition from traditional project management to Agile methodologies presents significant challenges for PMOs. To remain effective, PMOs must adapt by redefining their roles, embracing new practices, and fostering a culture that supports Agile principles. This evolution is essential for ensuring that PMOs continue to add value in a rapidly changing project management landscape. Traditional PMOs encounter significant challenges when attempting to integrate Agile methodologies into their existing frameworks. One major obstacle is the difficulty in identifying teams that are willing and prepared to hold Agile practices [4]. This resistance can stem from a lack of understanding, experience, or confidence in the Agile approach. As Agile methodologies become more prevalent across various sectors, the pressure to transform traditional PMOs into Agile Project Management Offices (APMOs) intensifies [5]. This transformation is crucial for ensuring that PMOs can effectively support and oversee Agile projects, which require a more flexible

and iterative approach to project management. The transition to Agile methodologies is not just beneficial but necessary for traditional PMOs to remain relevant and effective. Adapting to Agile practices will enable PMOs to better manage the dynamic and fast-paced nature of modern projects, thereby enhancing their overall performance and contribution to organizational success.

As organizations navigate the complex terrain of Agile project management, a critical gap in understanding emerges, prompting the need for a comprehensive model to guide transformation. This paper aims to address this gap by delving into the intricacies of Agile methodologies and offering insights into a bespoke Three-phases model. Developed to support organizations in enhancing agility and optimizing value delivery, this model is rooted in practicality and aimed at navigating the challenges of today's dynamic business landscape. By decoding the complexities of Agile project management and providing actionable insights, this research equips organizations with the tools needed to successfully traverse the path of organizational rejuvenation amidst transformational challenges.

2. Literature Review

The literature review critically examines two foundational components: Agile Project Management and Project Management Offices (PMOs). As businesses increasingly adopt agile methodologies, identifying suitable frameworks becomes crucial. Simultaneously, PMOs face challenges in adapting to dynamic customer markets, necessitating innovative and agile responses. The literature underscores gaps in understanding specific agile methodologies employed and the timeframe required for assessing the transformative impact. Bridging these gaps involves a focused exploration of frameworks like SAFe and LeSS, known for their efficacy in diverse organizational contexts, enhancing the success of agile methodologies.

2.1. Literature on Agile Project Management

The contemporary business landscape has undergone a profound transformation, compelling organizations to adopt new operational models. This shift is deeply ingrained among employees, aligning with the company's mission and vision statements. Concurrently, managers recognize the importance of transitioning to agile systems, a strategic move that streamlines

operations by reducing complexities and time-consuming activities. Salama (2021) emphasizes that organizations are increasingly embracing agility to expedite market entry, meet client demands, and enhance team productivity [6]. In the technology sector, the impetus to develop software that is more cost-effective, efficient, and faster has propelled the adoption of agile approaches. It is noteworthy that agile methodologies embrace adaptability, encouraging experimentation and a willingness to change direction during various project management stages [7]. This adaptability ultimately leads to the implementation of a flexible budget. Changes in management styles create opportunities for self-development, enabling teams to identify areas for improvement and fostering successful leadership. Barclays serves as a compelling example of a company undergoing agile transformation. The strategic dispersal of existing teams, coupled with an agile learning approach known as Discipline Agile Delivery [DAD], facilitated a collaborative shift among employees. The rapid conversion of over 800 teams to an agile system resulted in a remarkable 300% increase in throughput within a year. Notably, Barclays' agile teams, being the first to market new products, displayed agility in responding to feedback [8]. Jarvenpaa & Leidner's (2006) case study, exploring communication and trust in global virtual teams, offers valuable insights into the essential elements for successful agile implementation, emphasizing effective communication and trust-building [9]. Success in agile transformations hinges on various factors, including effective teamwork, communication, leadership, technology, and organizational designs. Culture emerges as a critical factor influencing the overall transformation process. In the financial sector, the customer takes center stage, exemplified by Barclays' practice of involving customers in every iteration, facilitating feedback loops to capture the latest requirements. Placing customers at the forefront of decision-making not only ensures customer satisfaction but also mitigates risks. The increasing importance of agile methods in financial institutions aims to establish flexible and adaptive organizational structures [10]. Real-time information exchange emphasizes strict management of costs, time, and project scope, illustrating the invaluable role of IT projects [11].

2.2. Literature on PMOs

Aligning the project portfolio with the company's strategy emerges as a significant concern, given that the execution of the project portfolio has often deviated from the optimal path within the organization's structure. It is crucial for Project Management Offices (PMOs) to remain conscious of the business and project execution alignment with the mission and vision statements. Globalization has intensified competition in markets, prompting organizations to develop more innovative and agile responses to maintain significant survival levels [12]. PMOs, particularly in the financial sector, need to navigate the dynamics of clientele as they are intricately linked to customer demands. The ever-changing customer market presents a challenge for traditional PMOs to swiftly adapt to emerging trends. Younus & Younis (2021) underscore resource management as another challenge for traditional PMOs, emphasizing that a clear vision from the organization or sector can mitigate this challenge [13]. Additionally, there is a need to address the challenge of effectively responding to changes in the sector's operations portfolio, acknowledging that traditional PMOs often struggle to reallocate resources or prioritize projects in response to such changes. Several Agile Transformation Frameworks (ATFs) are commonly employed by Project Management Offices (PMOs) to navigate the challenges of Agile implementation. These frameworks, namely the Scaled Agile Framework (SAFe), Large-Scale Scrum (LeSS), Discipline Agile Delivery (DAD), Scrum, and Kanban, serve as guiding methodologies for organizations transitioning to Agile practices. In essence, they provide structured approaches to project management in dynamic and iterative environments. The SAFe framework is specifically designed for scaling Agile beyond a single team. It focuses on coordinating efforts across different teams, building enterprise-level systems, and managing value streams within the organization. LeSS is a modified version of Scrum, LeSS emphasizes collaboration among multiple teams working together on a particular product. It adapts Scrum principles to suit larger organizational structures. The DAD framework represents a hybrid system often applied in IT projects. It takes a people-first approach, prioritizing learning throughout the project delivery process [14]. Scrum is a widely used Agile framework that promotes collaboration, adaptability, and iterative development. It is particularly effective for managing complex software development projects. Whereas Kanban is integral to DevOps software development, the Kanban framework involves

real-time communication and capacity transparency through a visual Kanban board. It allows teams to manage their work efficiently and make continuous improvements. In the area of PMOs, tasked with ensuring compliance and adherence to regulations, these ATFs become essential tools. The PMOs play a pivotal role in maintaining ISO compliance and navigating additional mandatory regulations, regardless of the specific ATF chosen by the management [15]. The choice of ATF is closely tied to the technology landscape of a company, with the financial sector, for instance, employing diverse technology techniques based on the specific customer cluster using their services. Emphasizing the need for precision, bureaucratic traditions in organizations highlight the importance of practices being both safer and more efficient. The ultimate goal is to ensure that the chosen ATF remains flexible, accommodating the unique demands of the applied technology and the organizational culture [16].

3. The Three-Phases Model Methodology

Research methodology is the systematic and organized process of investigating a specific topic or problem to gather valid and reliable data [17]. And the chosen methodology for this study is a mixed-methods approach, which combines quantitative and qualitative techniques to comprehensively explore the research problem [18]. This chapter encompasses a multi-phase research design aimed at laying the foundation for the study.

This section is crucial as it explores the current state of Project Management Offices (PMOs), selects an appropriate Agile framework, and develops an Agile transformation framework. The ultimate aim of this research is to create a three-phases model to transition traditional PMOs into Agile PMOs.

In Phase 1, we gather and analyze data on the operations of PMOs, focusing on governance structures, their roles, and the common project management methods in use. This in-depth analysis provides a foundational understanding for the rest of the study.

In Phase 2, the objective is to establish a procedure for selecting an Agile framework suited to any organization's PMOs. We evaluate six major Agile frameworks against set criteria to identify the best one for facilitating Agile transitions.

In Phase 3, we develop the Agile transformation framework. Drawing from literature reviews and the challenges highlighted in Phase 1, the framework offers a detailed guide for converting

traditional PMOs to Agile practices. This framework is designed to be adaptable and scalable.

3.1. Three-Phases Model – Phase 1: Collection of PMO Aspects

To thoroughly understand the landscape of Project Management Offices (PMOs) and establish a basis for developing a hypothetical PMO framework, we employed a systematic approach to collect information from multiple sources.

The primary goal of this phase was to gain a comprehensive understanding of PMO operations, which would inform the next steps of the research. We consulted a range of sources, including academic literature and project management resources such as those from the Project Management Institute (PMI), to gather information on various PMO aspects. This information was then organized into different parts that form the foundation of the PMO framework. 1) Organization's Project Management Standard; Numerous organizations embrace a standardized approach to manage their projects effectively. This may involve implementing established methodologies or devising tailored strategies to suit organizational needs [19]. 2) Oversight; This facet encompasses the framework, functions, and processes that steer project management activities, ensuring alignment with the strategic and operational objectives of the organization [20]. 3) PMO Domains; These encompass the primary and subsidiary tasks carried out by PMOs to bolster project management initiatives within organizations [21].

Through an examination of these elements, we aim to develop a thorough comprehension of the operational landscape of PMOs.

3.1.1. Organization’s Project Management Standard

The selected project management methodology or standard significantly influences project execution, governance practices, and the operations of the Project Management Office (PMO). Historically, the chosen standard has impacted diverse facets of project management, governance efficiency, and the broader project environment [19].

When implementing the waterfall methodology, the project development follows linear stages with fixed requirements and minimal flexibility. This results in extended delivery timelines with predefined scope and resources. The focus is on meeting

predetermined requirements, which may limit innovation and customer interaction. In terms of governance, the waterfall methodology employs a top-down hierarchical decision-making structure with formal decisions made at each project stage. Risk handling emphasizes early identification and mitigation of risks. Within the PMO domain, the waterfall approach offers standardized procedures and templates for project management, ensures adherence to predefined governance protocols, and focuses on enhancing and optimizing existing processes based on set standards [19].

In contrast, the agile methodology adopts a cyclic and incremental process that allows for adjustments and flexibility. This leads to rapid delivery cycles with adaptable scope and resource allocation. Agile promotes customer engagement, fostering innovation and continuous enhancement throughout the project. Its governance model is decentralized with team-based decision-making, empowering teams to make decisions and promoting self-organization. Risk management is ongoing throughout the project's duration. In the PMO domain, agile provides support for adaptive management practices, encouraging agility. It adapts governance practices to fit agile methodologies and encourages continuous learning and experimentation, driving ongoing improvement [19].

3.1.2. Oversight

Insights gleaned from the Project Management Institute (PMI) Practice Guide for governance [20] shed light on the foundational principles and practices essential for establishing effective project governance and oversight. The guide underscored the significance of defining clear roles, responsibilities, and decision-making structures within project teams to foster accountability and alignment with organizational objectives.

Moreover, the PMI Practice Guide [20] emphasized the pivotal role of Project Management Offices (PMOs) within the governance framework. It outlined the PMO's responsibilities in ensuring the successful implementation of project governance standards and processes. According to the guide, PMOs are typically tasked with various functions aimed at strengthening project governance. By recognizing the critical role of PMOs in strengthening project

governance, the guide underscored their importance as primary drivers of project success within organizations.

Project governance is categorized into four main domains and four primary functions. The interaction between these domains and functions facilitates the execution of all processes necessary to ensure robust governance practices within project environments as shown in Table 1.

Table 1. Program Governance Related Processes by Domains and Functions [20]

Functions **Domains**	**Oversight**	**Control**	**Integration**	**Decision Making**
Project Governance Alignment Domain	• Create project governance charter • Create project governance management plan • Establish governing body	• Monitor the adherence to governance management plan • Conduct project reviews and phase-gate reviews • Assess project management methodology adherence	• Integrate project governance into program and/or portfolio governance • Ensure project processes are aligned	• Establish decision-making process • Approve phase-gate reviews • Approve project schedule, scope, and budget
Project Governance Risk Domain	• Create risk management plan • Establish risk escalation process	• Conduct project audits • Ensure risk management adherence • Manage the project's internal and/or external dependencies	• Integrate dependency management • Perform impact analysis of proposed change	• Resolve and remediate escalated risks and issues • Identify, review, and mitigate risks
Project Governance Performance Domain	• Create performance management plan • Establish reporting and control processes	• Monitor project results • Monitor project health	• Perform performance reporting	• Assess proposed changes Assess change requests

	• Analyze project performance results			
Project Governance Communications Domain	• Create communication management plan • Communicate governance expectations and requirements • Communicate governance process changes • Champion organizational changes and ensure implementation acceptance	• Communicate roles, responsibilities, and authorities	• Communicate roadmap • Disseminate project reporting • Disseminate project information and impacts to stakeholders	• Report decisions made with justification

3.1.3. PMO Domain

The PMI framework [21] outlines nine core and ancillary workstreams, known as domains of work, which encapsulate the functions and duties of Project Management Offices (PMOs) in aiding project management endeavors. These domains encompass a variety of responsibilities designed to enhance project effectiveness and organizational productivity. PMO domains of work and their corresponding functions as outlined in the PMI framework [21] are as follow;

Standards, Methodologies and Processes
Methodology definition; metrics definition; process development and improvement

Project/Program Delivery Management
Define the business goals; resource management; schedule/cost/scope management; business realization management; risk management; stakeholder management; communications; project integration

Portfolio Management

Prioritization; strategic alignment; portfolio reporting; resource management allocation; opportunities and investment analysis; risk management; benefits realization tracking/reporting

Talent Management
Training, career paths, career development, capability/skills development and certifications/qualifications/ credentials

Governance and Performance Management
Performance reporting; issue escalation; information distribution; metrics/KPIs; compliance; financial management; PMO performance management

Organizational Change Management
Customer/stakeholder satisfaction; managing resistance; readiness assessment; stakeholder management; communications

Administration and Support
Tools (provisioning/implementation/support); consulting; IT/IS support

Knowledge Management
Defining knowledge management policies, managing intellectual collateral/property, lessons learned, content management and collaboration

Strategic Planning
Confirming strategic priorities; defining business goals and aligning to initiatives; environmental scanning; opportunity analysis

3.2 Three-Phases Model – Phase 2: Selection of an suitable Agile Framework

3.3.1. Identification of Agile Frameworks

The foundation for identifying Agile frameworks in Phase two stems from the pivotal research of Fernando Almeida and Eduardo Espinheira [22]. Their detailed relative analysis of six prominent Agile frameworks played a crucial role in this selection. Almeida and Espinheira's work highlights the top Agile frameworks through wide use and international acclaim, ensuring that our selection reflects real-world application and widespread acceptance in Agile

settings. The frameworks assessed in their study include: DAD (Disciplined Agile Delivery), LeSS (Large Scale Scrum), SAFe (Scaled Agile Framework), Scrum at Scale, Spotify's Agile Scaling Model. Following is a brief description of each framework:

1- DAD (Disciplined Agile Delivery): DAD is a hybrid Agile framework extending Scrum with practices from XP, UP, and Kanban, aiming to cover the entire delivery lifecycle. It allows flexible role assignment and scales tactically and strategically to fit project needs and organizational goals.
2- LeSS (Large-Scale Scrum): LeSS adapts Scrum for large projects by emphasizing cross-functional teams, simplicity, and transparency. It synchronizes all sprints and teams on a single product backlog, recommending a maximum of 8 teams, with a variant, LeSS Huge, for larger setups.
3- Nexus: Proposed by Ken Schwaber, Nexus coordinates multiple Scrum teams to deliver a single product increment. It introduces an integration team to resolve inter-team dependencies, focusing on transparency and cohesion between teams.
4- SAFe (Scaled Agile Framework): SAFe addresses large-scale Agile adoption across team, program, and portfolio levels, incorporating lean and agile practices. It organizes work into Agile Release Trains, emphasizing synchronized delivery and value flow across the organization.
5- Scrum at Scale: Designed by Jeff Sutherland, Scrum at Scale enables scaling Scrum to multiple teams while maintaining agility. It introduces concepts like Scrum of Scrums and Scaled Daily Scrum to coordinate efforts, with a focus on resolving impediments and achieving organizational growth.
6- Spotify Agile Scaling Model: Spotify's model scales Agile by organizing teams into squads, tribes, chapters, and guilds, emphasizing autonomy and collaboration. It introduces roles like Trio and Chief Architect to ensure alignment and address technical dependencies, promoting a culture of innovation and knowledge sharing.

The study by Fernando Almeida and Eduardo Espinheira [22] adopted a qualitative approach with an exploratory analysis of secondary sources to investigate the processes of migrating to large-scale agile. Qualitative research is chosen by the authors due to its focus on situational specifics and its ability to provide a

detailed description of processes, which is particularly useful in the still-emerging field of large-scale agile migration. The data collection process involved two stages: first, identifying large-scale agile frameworks; second, determining criteria for comparative analysis, incorporating challenges, success factors, and expected benefits identified from existing literature. 15 resulted criteria encompass common factors across studies and also included lesser-known aspects such as waste elimination and learning ability, which are deemed relevant by the authors for evaluating large-scale agile frameworks comparatively.

3.3.2. Comparative Analysis

To conduct the comparative assessment of Agile frameworks, we turned to the comprehensive research conducted by Fernando Almeida and Eduardo Espinheira [22]. Their study involved a thorough evaluation of the six identified frameworks, with a focus on comparing their attributes and potentialities against predefined criteria. This evaluation process is visualized in Table 2, which provides a detailed illustration of the framework comparisons.

Table 2. Comparative analysis of large-scale agile frameworks [22].

Criteria	DAD	LeSS	Nexus	SAFe	Scrum at Scale	Spotify
Accommodate changes	Moderate	Low	High	Low	Low	High
Continuous improvement	Low	High	High	Low	Low	High
Control level	Moderate	High	High	High	Moderate	Moderate
Coverage	High	Moderate	Moderate	High	Moderate	Moderate
Customer involvement	Moderate	High	Moderate	High	Moderate	Moderate
Ease to use	Low	Low	Low	Moderate	Moderate	Moderate
Flexibility	Low	Low	Low	Low	Moderate	Moderate
Geographically distributed	Moderate	Moderate	Moderate	High	Low	Moderate
Learning ability	High	High	Moderate	Low	Low	High
Scalability	High	Moderate	Low	High	Low	Moderate
Team size	Moderate	Moderate	Low	High	Low	Low
Technical complexity	Moderate	Moderate	Low	High	Low	Low
Time to market	Moderate	Moderate	Moderate	Moderate	Moderate	High
Transparency	High	High	High	High	Moderate	High
Waste elimination	Low	Low	Low	Low	Moderate	Low

In organizational research, pivotal guidance from Fernando Almeida and Eduardo Espinheira [22] shaped the decision-making

process towards the most fitting Agile framework. To align comparisons with research objectives, advocating for the utilization of a Simple Scoring Technique, as suggested by Pinto [23], emerges as a key recommendation.

In determining suitable weights for each criterion, organizations should start by consulting the predefined list of criteria and their accompanying descriptions. After this initial step, the company should assess the relevance of each criterion on a scale from 1 to 3, where 3 indicates the highest relevance and 1 indicates the lowest. This approach ensures that criteria are weighted according to their importance within the unique context of the organization, thereby improving the accuracy and applicability of the analysis.
The criteria and their descriptions are as follows:

1. **Accommodate changes**: The extent to which an agile framework allows for and effectively manages changes in project requirements, scope, and priorities.
2. **Continuous improvement**: The degree to which an agile framework supports and promotes regular evaluation and enhancement of processes, practices, and performance.
3. **Control level**: The ability of an agile framework to provide sufficient oversight and governance to ensure project alignment with goals, standards, and regulatory requirements.
4. **Coverage:** The breadth and comprehensiveness of an agile framework in addressing various aspects of project management, from planning and execution to delivery and maintenance.
5. **Customer involvement**: The framework's capacity to facilitate meaningful customer engagement and feedback throughout the project lifecycle.
6. **Ease of use**: The simplicity and user-friendliness of an agile framework, making it accessible and straightforward for teams to adopt and utilize.
7. **Flexibility**: The agility of a framework in accommodating different project types, team structures, and business environments.
8. **Geographically distributed**: The effectiveness of an agile framework in supporting teams that are spread across multiple locations. This includes tools and practices that enhance remote collaboration and communication.

9. **Learning ability**: The framework's emphasis on fostering learning and knowledge sharing within the team. This involves mechanisms for capturing lessons learned and applying them to improve future work.
10. **Scalability**: The capability of an agile framework to scale up or down based on the project size and complexity. Scalable frameworks can handle larger projects or multiple teams without losing effectiveness.
11. **Team size**: The suitability of an agile framework for different team sizes, from small, tight-knit groups to larger, more complex teams.
12. **Technical complexity**: The level of technical expertise required to implement and use the agile framework. Lower technical complexity makes it easier for teams with diverse skill sets to adopt and succeed with the framework.
13. **Time to market**: The efficiency with which an agile framework can help deliver products or features from conception to release.
14. **Transparency**: The clarity and openness promoted by an agile framework regarding processes, progress, and decision-making. High transparency fosters trust and informed decision-making among stakeholders.
15. **Waste elimination**: The ability of an agile framework to identify and remove non-value-adding activities, thus optimizing resources and improving efficiency.

Furthermore, each gradual indicator undergoes assessment, with a score value assigned, categorized as high (3), moderate (2), and low (1) (please consult Table 3 for reference). The resultant weighted scores obtained from this methodology for each framework facilitate the identification of the optimal Agile Framework tailored to an organization's requirements, aligning seamlessly with the distinct needs and attributes of Project Management Offices (PMOs) within that specific context.

Table 3. Assigned Score Value to Indicators.

Gradual Indicator	Score Value
Low	1
Moderate	2
High	3

3.4. Three-Phases Model – Phase 3: Development of the Agile transformation framework

3.4.1. Literature Review on Agile Transformation

The literature review on Agile transformation aimed to comprehensively understand existing frameworks, methodologies, and approaches utilized in organizations undergoing Agile transformations. We synthesize findings from three key references that offer valuable insights into agile transformation methodologies.

Jovanovic et al. 2020 [24] conducted a systematic mapping study to explore existing literature on agile transition and adoption frameworks. They employed a rigorous search strategy for screening and selecting relevant research studies on agile transition processes and process tailoring. Four sequential research stages were employed, with each stage involving specific activities to reduce the sample size and refine the selection criteria. 28 studies were identified as primary studies by the authors [24], meeting high rigor criteria.

The analysis of the chosen primary studies by Jovanovic et al. 2020 [24] revealed nine agile transformation frameworks and structural approaches for agile method adoption. Notable frameworks identified include those proposed by Cao et al., Barlow et al., Chan and Thong, Rohunen et al., Qumer and Henderson-Sellers, Gandomani and Nafchi, Sidky et al., and Conboy and Fitzgerald [24]. These frameworks offer diverse perspectives on agile transition, addressing factors such as methodology adaptation, process change management, acceptance of agile methods, and method tailoring. Each framework presents unique strategies and considerations tailored to the specific needs and contexts of organizations undergoing agile transformation.

In addition to Jovanovic et al. 2020 research, another study was found focused on the adoption of the Scaled Agile Framework (SAFe) within non-agile organizations, Kwete Mwana Nyandongo and Mmammule Grace Madumo [25] present a detailed 10-step implementation roadmap. This roadmap provides a structured approach for organizations transitioning to SAFe, offering guidance from training lean-agile change agents to extending SAFe principles to the portfolio level.

Moreover, the Scaled Agile Framework (SAFe) [26] offers its own implementation roadmap, outlined on its official website. This roadmap provides a strategic and ordered set of activities proven effective in successfully implementing SAFe across various organizations. This roadmap offers a structured approach for organizations to embrace SAFe and accelerate its benefits.

3.4.2. Development of the Agile transformation framework

Transitioning to the third phase of this investigation entails the construction of the Agile transformation framework, this framework serves as a detailed guide, helping traditional Project Management Offices (PMOs) transition to agile methodologies effectively. By integrating insights from existing research and addressing common challenges, we aim to facilitate a smooth and comprehensive transformation. To develop this framework, we employed a strategic approach that involved extensive literature review and practical insights. Key strategies include analyzing previous studies, understanding the specific needs of PMOs, and tailoring the framework to address widespread issues within the organization. This process ensures that the framework is both robust and adaptable to various contexts. Transitioning to agile methodologies often presents several challenges, such as resistance to change, lack of agile expertise, and integrating new practices with existing processes. Our framework addresses these challenges by providing practical solutions and step-by-step guidance. For instance, we emphasize the importance of continuous training, fostering a culture of collaboration, and gradually integrating agile practices. To illustrate the application of the framework, consider a scenario where a traditional PMO faces challenges in adopting agile methodologies. By following our framework, the PMO can identify specific pain points, implement tailored solutions, and track progress through iterative feedback loops. This practical approach ensures that the transition is both effective and sustainable.

The Agile transformation framework will be designed by translating the challenges identified in the first phase of our study into actionable components. The goal is to address these obstacles systematically, providing traditional PMOs with clear pathways to adopt agile methodologies. Initially, we pinpointed various barriers such as rigid governance structures and stakeholder resistance. These barriers were then analyzed to understand their root causes

and implications for agile transformation. For instance, rigid governance structures are a significant challenge, hindering flexibility and adaptability. To ensure a practical approach, each challenge was linked to specific elements of the framework. For example, the challenge of rigid governance was addressed by incorporating elements that promote organizational flexibility and adaptive governance practices. Similarly, strategies for managing change and engaging stakeholders were developed to tackle resistance effectively. The framework was crafted to offer tailored solutions, addressing each identified barrier with relevant strategies. For example, to address stakeholder resistance, a detailed method for change management and stakeholder engagement will be addressed, ensuring that all parties are aligned with the agile transformation goals. To illustrate practical application, imagine a traditional PMO struggling with resistance to change. By applying the framework, the PMO can systematically identify resistance points, apply tailored engagement strategies, and monitor progress through feedback loops. This ensures that resistance is managed effectively, facilitating a smoother transition to agile practices. The development of the Agile transformation framework caters to the diverse requirements of traditional PMOs transitioning to agile methodologies. This process involved comprehensive literature reviews and synthesizing insights to address various identified challenges. The framework is organized into distinct modules and layers, each addressing specific aspects of Agile transformation. Key areas include organizational structure, governance mechanisms, project management standards, stakeholder engagement strategies, and cultural transformation initiatives. Each module contains interconnected components that together create a holistic approach to Agile transformation. Designed with flexibility and scalability in mind, the framework allows PMOs to tailor its implementation according to their unique organizational contexts and evolving levels of Agile maturity. This adaptability ensures that the framework remains relevant and effective as organizations grow and change. This process ensured that the framework provides a comprehensive yet adaptable roadmap for navigating the complexities of Agile transformation across all PMOs. Consider a PMO facing challenges with stakeholder engagement during their Agile transition. Using the framework, they can implement specific strategies from the stakeholder engagement module, monitor outcomes, and adjust their approach as needed. This tailored application ensures

effective stakeholder alignment and support throughout the transformation process.

4. Results

This section offers an in-depth exploration of the proposed three-phases model designed to convert traditional Project Management Offices (PMOs) into agile PMOs.

Phase 1 of the study concentrated on comprehending the existing status of PMOs, encompassing their domain, responsibilities, methodologies, and oversight frameworks. Phase 2 revolved around choosing the most appropriate Agile framework customized for each organization. Lastly, Phase 3 sought to construct the Agile transformation framework by combining insights from preceding phases.

This chapter delineates the transitioning model from traditional to agile, empowering organizations to augment agility and efficiency in project management.

This chapter provides a comprehensive analysis of the three-phases model aimed at transforming traditional Project Management Offices (PMOs) into agile PMOs. The first phase focuses on analyzing the existing state of PMOs, including their roles, standards, and governance structures. This phase establishes a baseline understanding of how traditional PMOs operate. In the second phase, the study emphasizes selecting the most suitable Agile framework tailored to each organization's specific needs. This customization ensures that the chosen Agile practices align with the organization’s unique context and goals. The final phase involves developing the Agile transformation framework by integrating insights from the first two phases. This phase synthesizes the understanding of current PMO practices and the selected Agile framework to create a comprehensive transformation guide. This chapter outlines the transition model from traditional to agile PMOs, providing organizations with strategies to enhance agility and efficiency in project management. By following this structured approach, organizations can systematically implement agile methodologies, leading to improved project outcomes and greater adaptability.

4.1. Synthesis of Phase 1 Findings and Traditional Framework Development

This stage involves a detailed analysis of all aspects related to PMOs and project management, forming the basis for understanding the current state of any PMO. In the first phase of the three-phases model, organizations should evaluate their existing PMO framework across three key dimensions: standard, oversight, and roles. This assessment will serve as the foundation for transitioning from the current state to the desired future state.

Key Dimensions for Evaluation:

1. **Project Management Standard**:
    - **Objective**: Identify the methodology the organization employs.
    - **Details**: Understand the typical life cycle of the employed methodology.
2. **Oversight**:
    - **Objective**: Outline the governance functions and domains the organization encompasses.
    - **Details**: Assess the structure and effectiveness of governance within the PMO.
3. **PMO Domain**:
    - **Objective**: Describe the activities the existing PMO undertakes.
    - **Details**: Catalog and evaluate the current functions and responsibilities of the PMO.

This framework enables organizations to thoroughly assess their current PMO setup. By examining the methodology, governance, and functions, organizations can establish a clear understanding of their present state, which is essential for planning the transition to a more agile and efficient future state.

4.2. Guide to Selecting the Most Suitable Agile Framework

In the second phase of this study, we provide organizations with a structured roadmap to choose the most suitable Agile framework through a comparative analysis of widely recognized frameworks.

Steps for Selecting the Agile Framework:

1. **Assigning Weights**:
    - **Objective**: Assess the relevance of each criterion.

- **Method**: Use a scale of 1 to 3 to reflect the organization's specific context and priorities.

2. **Converting Indicators to Values**:
   - **Objective**: Translate qualitative indicators into numerical values.
   - **Method**: Refer to Table 3 to convert indicators (Low, Moderate, High) for each criterion into corresponding numerical values.
3. **Calculating Scores**:
   - **Objective**: Determine the score for each framework.
   - **Method**: Multiply the assigned weight for each criterion by the respective score value of each framework.
4. **Summing the Scores**:
   - **Objective**: Aggregate the weighted scores.
   - **Method**: Add up all the weighted scores for each framework.

Determining the Most Suitable Framework:

- **Objective**: Identify the framework that best aligns with organizational needs.
- **Method**: The framework with the highest cumulative score is considered the most suitable, as it aligns best with the prioritized criteria.

By following these steps, organizations can systematically and quantitatively evaluate which Agile framework best fits their unique needs and operational context. This structured approach facilitates an informed and contextually relevant decision, ensuring that the chosen Agile framework supports the organization’s goals and priorities.

4.3. Development of the Agile transformation framework

During this stage, we introduce the creation of the Agile transformation framework, a thorough roadmap designed to facilitate the successful transition of traditional Project Management Offices (PMOs) into agile PMOs. Drawing upon insights gleaned from the literature review, the development of

the Agile transformation framework tackles the distinct challenges encountered by traditional PMOs as they transition to agile methodologies.

4.3.1. Translation of Challenges into Framework Segments

The pain points and challenges identified in Phase 1 should be systematically analyzed to understand their underlying causes and implications for PMOs. Each challenge is then translated into specific parts of the framework. For instance, challenges related to rigid governance structures were addressed through components focused on organizational agility and adaptive governance mechanisms. Issues related to stakeholder resistance were tackled by incorporating change management strategies and stakeholder engagement frameworks. This systematic alignment ensured that the framework provided targeted solutions for overcoming the specific obstacles encountered during the Agile transformation journey.

4.3.2. Design and Structure of the Framework

The framework was meticulously designed to cater to the multifaceted needs of traditional PMOs transitioning to agile methodologies. The framework is organized into distinct modules and layers, each summarizing a set of interrelated components that address key aspects of Agile transformation, such as:

- **Project Management Standards:** Agile methodologies tailored to the unique needs of PMOs, including iterative planning and continuous delivery.
- **Oversight Mechanisms:** Adaptive governance strategies that align with agile principles while ensuring effective control and predictability.
- **Organizational Structure:** Components focusing on creating agile organizational designs that promote flexibility and scalability.
- **Stakeholder Engagement Strategies:** Frameworks for engaging stakeholders actively and managing resistance to change.
- **Cultural Transformation Initiatives:** Initiatives aimed at fostering an agile culture within the organization, promoting collaboration, and continuous improvement.

Through iterative refinement and validation, the framework was optimized to provide a comprehensive yet adaptable blueprint for navigating the complexities of Agile transformation. The modular structure allows PMOs to tailor the framework to their unique organizational contexts and evolving Agile maturity levels, ensuring its practical applicability and effectiveness.

The Agile transformation framework developed in this research provides a structured, evidence-based guide for PMOs aiming to transition to agile methodologies. By integrating insights from existing literature and addressing identified challenges, the three-phases model offers targeted solutions and strategic guidance to support successful Agile transformations.

5. Discussion and Conclusions

In the last phase of this study, we culminate our efforts by constructing a robust Agile transformation framework. Drawing upon the insights gleaned from earlier phases, which delved into the nuances of traditional project management practices, governance norms, and agile framework selection, Phase 3 synthesizes these elements into a cohesive guide aimed at steering organizations through their Agile transformation journey.

Our model is a testament to the synthesis of traditional knowledge and agile innovation. We have identified significant challenges ingrained within conventional approaches, including the struggle to adapt to change, maintain agility, and foster innovation within rigid structures. Leveraging insights from our previous phases, Phase 3 constructs a dynamic framework intended to tackle these challenges head-on, facilitating Agile transformation with precision and effectiveness. Emphasizing flexibility, adaptability, and innovation within organizational structures, our model is tailored to accommodate the specific needs and challenges encountered by individual organizations.

While our three-phases model provides a structured pathway for Agile transformation, it also reveals several challenges and limitations. Organizational resistance can be a significant hurdle, as convincing stakeholders at all levels of the benefits of Agile methodologies and securing their buy-in can be difficult. The complexity of transitioning from traditional project management to Agile methodologies involves a comprehensive overhaul of

processes, roles, and responsibilities, requiring meticulous planning and execution to minimize disruptions. Lack of executive support is another potential obstacle, as the success of Agile transformation often depends on strong executive sponsorship and support, which may be hard to obtain without a thorough understanding of Agile practices. Cultural misalignment between organizational culture and Agile values can hinder progress, necessitating efforts to reconcile conflicting norms and foster a culture that supports Agile adoption. Additionally, resistance from external partners can pose a challenge, requiring alignment efforts and addressing concerns to ensure smooth collaboration.

To overcome the challenges inherent in Agile transformation, organizations need a holistic strategy integrating strategic vision, effective change management, and continuous improvement.

Strategically, they must define clear objectives and ensure alignment with overarching business goals. This necessitates securing unwavering executive leadership support to drive the transformation forward.

In terms of change management, engagement of stakeholders at all levels is crucial for garnering buy-in and commitment to Agile principles. Transparent communication strategies are essential for managing expectations and addressing concerns, alongside providing comprehensive training programs to equip employees with requisite Agile skills.

Continual improvement is key, emphasizing an iterative approach that fosters ongoing experimentation, learning, and adaptation. Establishing feedback mechanisms to glean insights from teams and stakeholders and defining key performance indicators (KPIs) for evaluating Agile practices, ensures progress tracking and optimization over time.

By embracing a holistic approach that amalgamates strategic vision, effective change management, and a steadfast commitment to continuous improvement, organizations can surmount the challenges of Agile transformation and realize the full potential of the Agile transformation framework. This proactive stance will empower organizations to harness the benefits of Agile methodologies, driving sustainable business growth and fostering a culture of innovation.

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