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**Critical Success Factors in the Implementation
of
Project Management Tools in a Small-Sized
Nonprofit Organization**

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1. State of the Art

Project Management Information Systems (PMIS) have become increasingly relevant across a wide range of organizational contexts due to the flexibility and the adaptation that they can provide (Rebuglio et al., 2025; Ottaviani, Rebuglio, & De Marco, 2023). They have been adopted in many sectors as Automotive, Aerospace and Pharmaceutical and no-profit organizations among the others. These last two cited will be the main areas of the work due to the on-field experience. The flexibility provided by these tools allow easy access and governance of teams of different sizes and different cross-functional units, providing a better way to spread information and status reports of several projects simultaneously (De Marco, Rebuglio, & Di Napoli, 2025; Rebuglio, Ottaviani, & De Marco, 2026).

As defined by the Project Management Institute (PMI) in the PMBOK Guide, a PMIS is an organized, often automated, toolset for collecting, integrating, and distributing project data, supporting all phases from initiation to closing and enabling project managers to track KPIs, manage resources, and streamline communication (Ottaviani, Rebuglio, & De Marco, 2023; Rebuglio et al., 2025). The adoption of such tools allows organizations not only to centralize project-related information, but also to improve coordination, accountability, and overall project outcomes (De Marco et al., 2025; Rebuglio, Ottaviani, & De Marco, 2026). Despite substantial research supporting the value of project management practices, effective implementation within an organization remains difficult to achieve.

In this context, the identification of the factors that determine the success or failure of such implementations becomes a critical concern for both researchers and practitioners. The concept of Critical Success Factors (CSFs) was first introduced by Rockart as a framework for identifying the limited number of areas in which satisfactory results ensure competitive performance. Building on this foundation, Boynton and Zmud formalized the concept, while subsequent scholars have applied it extensively to the domain of information systems and project management. In the general context of project management, the most cited and significant factors influencing project success include clear goal definition, top and senior management support, and effective project communication. More recent empirical research confirms this landscape, identifying as key CSFs the competence and experience of the project manager, precise definition of user requirements, effective stakeholder management,

continuous project monitoring and control, and a well-prepared and coordinated project team (Ottaviani, De Marco, Narbaev, & Rebuglio, 2024; Ottaviani et al., 2025). These findings, however, are largely drawn from corporate and for-profit settings, leaving a gap in our understanding of how CSFs operate in alternative organizational contexts.

Nonprofit organizations present a distinct set of challenges that set them apart from their for-profit counterparts. While larger nonprofits have begun to adopt project management practices, the small organizations that form the backbone of charitable and educational work still largely operate without structured project management approaches. Nonprofits often face limited financial resources, which can constrain project budgets and timelines, and must operate with a high degree of flexibility due to the unpredictability of funding and resources. Furthermore, the cultural change required within an organization represents a major barrier to the implementation of project management practices, a challenge that is particularly acute in small nonprofits where informal working cultures are deeply embedded. Despite the growing availability of accessible PMIS tools and the operational benefits they can provide, nonprofit organizations lack the project management resources available within profit-generating organizations, requiring their leaders to devise creative solutions to help personnel acquire the necessary implementation skills (Rebuglio et al., 2025; Ottaviani, Rebuglio, & De Marco, 2023). While the existing literature has explored CSFs for PMIS implementation primarily in for-profit contexts, research addressing small-sized nonprofit organizations remains limited. This study seeks to contribute to that conversation by examining the factors that may influence the implementation of project management tools in a small nonprofit, with the aim of offering insights that could prove relevant to a sector that has received comparatively less scholarly attention.

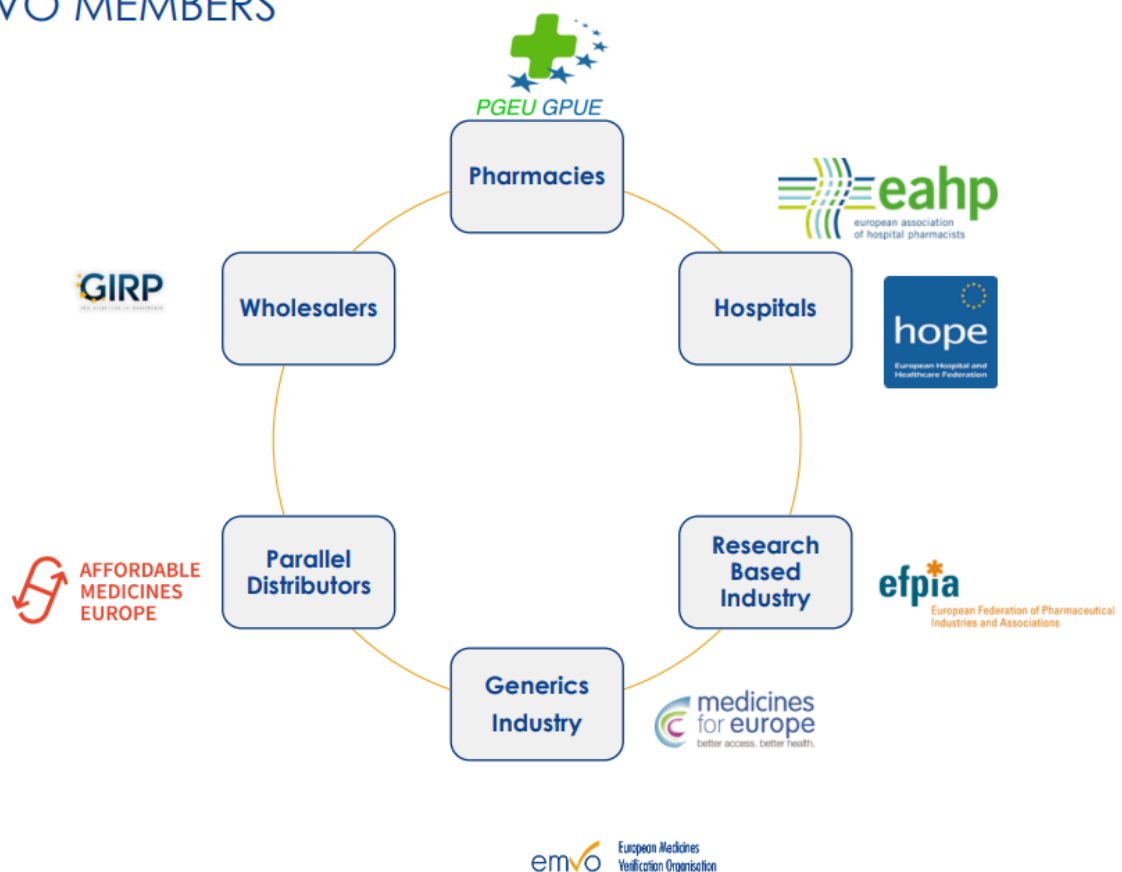
The study is based on on-field experience and special thanks to the Organization that has provided to me some of the best and most professional co-workers, inspiring me everyday to do my best on the job.

2. Introduction

2.1 The organization

This study examines the implementation of project management tools within the **European Medicines Verification Organisation (EMVO)**, a Belgian nonprofit organisation based in Brussels, representing stakeholders united in securing the legal supply chain from falsified medicines, whose founding members include EFPIA, Medicines for Europe, PGEU, GIRP, and Affordable Medicines Europe.

EMVO MEMBERS



Established in 2015, EMVO was mandated by its stakeholders with setting up and running the European Hub, whose main purpose is to store master data and act as a gateway for the transmission of manufacturer data to national medicine verification systems EMVO. Despite

operating at a European scale and managing a technically complex infrastructure, EMVO remains a small-sized organisation, making it a particularly relevant and underexplored case for the study of project management tool implementation in the nonprofit context. The regulatory foundation for EMVO's mandate is Directive 2011/62/EU on Falsified Medicines (FMD) and the associated Delegated Regulation (EU) 2016/161, which together require that all prescription medicines bear unique identifiers to be verified through the European Medicines Verification System (EMVS) before reaching patients. Despite operating at a European scale and managing a technically complex regulatory infrastructure, EMVO remains a small-sized organisation of approximately thirty employees, making it a particularly relevant and underexplored case for the study of project management tool implementation in the nonprofit context.

2.2 The PMIs used

The tools under analysis are Jira and Confluence, both part of the Atlassian product suite, and Smartsheet. Jira is a widely adopted issue and project tracking platform originally designed for software development teams and subsequently extended to general project management use. It supports sprint planning, task assignment, progress tracking, and workflow automation, making it suitable for teams managing complex, multi-stream projects. Confluence, developed by the same vendor, functions as a collaborative knowledge management and documentation platform, enabling teams to create, organize, and share information in a centralized workspace. It is commonly used in conjunction with Jira to provide the documentation layer for ongoing projects. Smartsheet, by contrast, is a cloud-based work management platform combining the familiarity of spreadsheet-style interfaces with project management capabilities, including Gantt charts, resource planning, and automated reporting. The simultaneous adoption of all three tools represented a significant operational shift for EMVO, requiring not only technical configuration but also coordinated organizational change management efforts across the entire staff.

2.3 Critical Success Factors

The concept of Critical Success Factors (CSFs), as defined by Rockart and later elaborated by Boynton and Zmud, provides the theoretical lens through which this implementation is analyzed. In the context of information systems and project management tool adoption, the literature identifies several recurring CSFs, including top management support, user engagement, organizational readiness, alignment with strategic objectives, and the quality of change management processes. However, as established in the State of the Art, these factors have been studied predominantly in for-profit and large organizational settings. This study applies the CSF framework to a small nonprofit organization, contributing empirical evidence to a context that remains largely absent from the existing literature.

The research is based on a combination of sources gathered during an internship at EMVO, during which the implementation process took place. Data collection drew on direct observation, internal documentation, and interviews with staff members involved in the adoption process. This methodological approach allows for a grounded and contextualized analysis of the factors that facilitated or hindered the implementation of project management tools within the organization. The figure of the Change Manager (a navigated and experienced figure in the Organization) has been of a crucial importance, because he was both a guide for the implementation and the first user providing important insight and continuous support.

2.4 Change Management

Change management refers to the structured approach through which organizations plan, implement, and consolidate significant shifts in processes, systems, or behaviors. Two foundational models dominate the academic and practitioner literature on organizational change. The first is Lewin's three-stage model, introduced in 1947, which conceptualizes change as a process of unfreezing existing behaviors, implementing the change, and refreezing the new practices into organizational routines. Lewin's model is widely regarded as the fundamental approach to managing organizational change and has dominated western theories of change for decades. The second is Kotter's 8-Step Model, introduced in 1996, which elaborates the change process into a more granular sequence: creating a sense of

urgency, building a guiding coalition, forming a strategic vision, communicating that vision, removing obstacles, generating short-term wins, sustaining acceleration, and anchoring the change in organizational culture. Kotter's eight-stage process is one of the most widely recognized models for change management, and while it was originally developed as a linear framework, subsequent scholarship has highlighted the complexity and non-linearity of real-world change processes. Both models are relevant to the EMVO case, as the implementation of Jira, Confluence, and Smartsheet required not only technical deployment but also deliberate efforts to shift staff behaviors, build internal buy-in, and embed new working practices into the organization's daily operations. The last piece of introduction will be regarding the ADKAR model, since it has been a great inspiration for the whole process and providing guidance on how some changes can be effectively apported.

2.5 ADKAR Model

The ADKAR model is an outcome-oriented change management framework developed by Jeff Hiatt, founder of Prosci, following extensive research with hundreds of organizations over more than a decade. The focus of the model is on the individual person, since all successful change occurs at the personal level where people involved in the change move through stages of acceptance and action. The acronym ADKAR stands for the five sequential building blocks that must be achieved for change to succeed at the individual level: Awareness, Desire, Knowledge, Ability, and Reinforcement. Each step must be completed before moving on to the next, as it is not possible to achieve success in one area unless the previous action has been addressed. Awareness refers to understanding why change is necessary; Desire represents the motivation and personal choice to support the change; Knowledge encompasses understanding of how to change; Ability involves the practical capacity to implement new behaviors and skills; and Reinforcement addresses the mechanisms needed to sustain the change over time and prevent regression to previous practices.

The ADKAR model is based on the understanding that organizational change can only happen when individuals change, and it is used by thousands of change leaders around the world to guide individuals through the transition process. In the context of EMVO's implementation of Jira, Confluence, and Smartsheet, the ADKAR framework provides a

valuable lens for analyzing whether each staff member was adequately supported through the transition — from initial awareness of the new tools and their rationale, through the development of practical competencies, to the consolidation of new working habits. Given the small size of the organization, where individual adoption patterns are highly visible and directly impact overall operational performance, the individual-centered perspective of ADKAR is particularly well-suited to this case study.

In the next chapter, there will be a deeper Organizational analysis, an introduction to the challenges that Environmental Factors may have during the period (as the regulation in the Pharmaceutical field and the constraint and advantages of a non-profit and non-Government organization), the key figures of the process will be presented, the teams involved and the organigram. Some actors will be analyzed more in depth since they will be involved more and impacted more by the change (g.e. the PMs and the Change Manager). A passage to the reasons that were pushing the changes will be dedicated, with analysis on the risks and the Strengths or Opportunities (SWOT analysis) that could rise from the adoption of some tools or some competitors (or what could be some limitations).

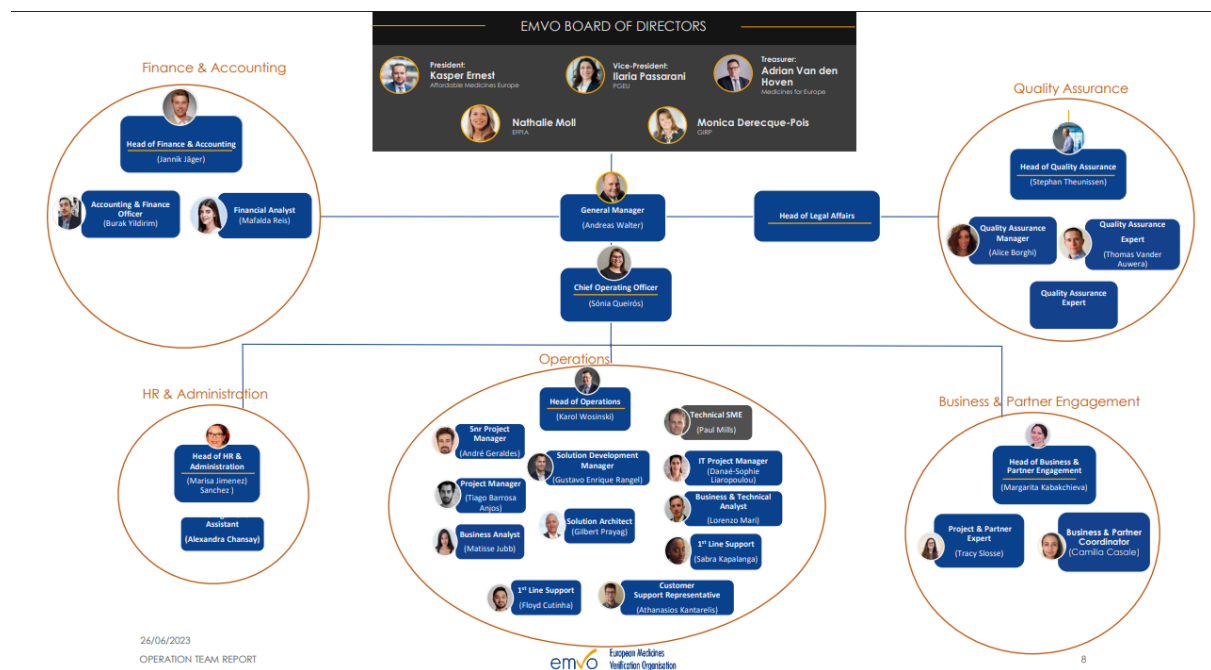
3. Context

3.1 Organizational Overview

The European Medicines Verification Organisation (EMVO) is a Belgian nonprofit organisation founded in 2015 as a joint initiative of key European pharmaceutical supply chain stakeholders. Its founding members represent pharmaceutical manufacturers and parallel importers (EFPIA, Medicines for Europe, Affordable Medicines Europe), wholesalers (GIRP), and community pharmacists (PGEU), with EAHP and HOPE as affiliate stakeholders. EMVO operates as a small-sized organisation with approximately thirty employees, a scale that places it firmly within the category of small nonprofit organisations despite the European reach of its mandate. This combination — a technically complex operational scope managed by a lean, mission-driven team — defines the organizational context in which the project management tool implementation analyzed in this study took place.

When the project started, back in October 2022, the world was just getting back up to normality after the Pandemic hit and the Pharmaceutical field was having a higher attention in terms of privacy of data and patient safety. The external context required an additional attention to details and the importance of having data shared among teams in safe ways was a priority.

In terms of internal organization and company structure, EMVO was a Hierarchical Organization with a General Manager in charge of maintaining the Vision of the Organization and coordinating the Finance & Accounting Team and the Quality Assurance Team, the Chief Operating Officer, on the other hand, was the upper management for the Teams of Business and Day-by-day Operations. This second part of the Organization, was divided into HR & Administration Team, Business & Partner Engagement Team and the **Operation Team** (OPS Team or as we used to name ourselves, The Avengers) with the best Head of Operation I could ever work with, Karol.



After an analysis of the context, we can highlight five different teams: Finance & Accounting, Quality Assurance, HR & Administration, Business & Partner Engagement and Operation Team. Each of this team had his own Manager and its own objectives and tools in use. This is an important passage since, while we will be looking for the perfect tool, we need to take in consideration all the different systems used by the different actors in the Organization and how the respective tool can interact or how some tool may be replaced without getting any important loss in terms of data or process.

The perimeter of the implementation was initially only for the Operations Team, for which a deeper structure analysis will be provided: the Head of Operation was the real Guide of the team, he was the link between the team and the upper management and his sustain for the project was crucial for his implementation.

On a second layer, we can find 3 different Project Managers that will be the one really benefitting from the PMIs. Each of them has a different product/project already ongoing and their already used practices. The tools chosen need to be a software that fits these three actors, their engagement is vital for the adoption and the maintenance of the Software.

The implementation is facilitated by the Solution Developer Manager (also Change Manager) and from the Business Analysts available in the Organization, the ones able to give actual insight on some practices internal to the Product and or teams. Having their perspective allows a deeper understanding and interaction with the system.

The last part of the team to be described, not for importance, is the Customer support team, with the 1st and 2nd Line Support and the Customer Support Representative that allow the team to get the real need of the Patient and Customer. Even though EMVO is a Non-Profit Organization, it still needs to provide a good stable and easy to use Software, it always needs to be prepared in case new countries wants or needs to join the European market and, especially on this first line of support, always needs to be available in case of downtime. For this team, the change is a bit more marginal, since they use a different system for the reporting, but their knowledge on how some particular cases needs to be handled can be crucial on some choices.

3.2 Regulatory Context

EMVO's activities are governed by a precise regulatory framework. Directive 2011/62/EU on Falsified Medicines (FMD) established the legal obligation for all prescription medicines circulating in the European Economic Area to bear unique identifiers, enabling end-to-end verification through national and European systems. The associated Delegated Regulation (EU) 2016/161 defined the technical specifications for these safety features and the architecture of the European Medicines Verification System (EMVS). EMVO was mandated by its stakeholders with setting up and running the European Hub, which stores master data and acts as a gateway for the transmission of manufacturer data to national systems. The system went live on 9 February 2019, requiring all prescription medicines bearing the new safety features to be verified before dispensing to patients. This regulatory deadline created significant operational pressure on EMVO in its early years, shaping the organization's project priorities and internal workflows in ways that directly influenced the subsequent need for more structured project management practices.

Operating within the pharmaceutical sector imposes quality and compliance requirements that go significantly beyond what is expected in most other organizational contexts. The

pharmaceutical industry is governed by a set of Good Practice (GxP) standards — encompassing Good Manufacturing Practice (GMP), Good Distribution Practice (GDP), Good Laboratory Practice (GLP), and others — that collectively establish stringent expectations for data integrity, traceability, and system reliability at every stage of a product's lifecycle. These standards apply not only to manufacturing processes but also to the computerized systems that support them, including project management and documentation tools.

In this context, GAMP 5 (Good Automated Manufacturing Practice, 5th edition) represents the leading industry framework for the validation of computerized systems in regulated pharmaceutical environments. Published by the International Society for Pharmaceutical Engineering (ISPE), GAMP 5 provides a risk-based approach to ensure that computerized systems in the pharmaceutical and medical device industries are validated and operate as intended. Its guidance aims to safeguard patient safety, product quality, and data integrity in the use of GxP computerized systems, achieving systems that are fit for intended use and meet current regulatory requirements. Although GAMP 5 carries no legal obligation in itself, it is referenced and respected by major regulatory agencies worldwide, including the FDA and EMA, and has become the de facto industry standard for computer system validation.

For an organisation like EMVO, which manages a critical data infrastructure underpinning the verification of prescription medicines across 28 EEA countries, the implications of these standards are significant. Any system adopted internally — including project management tools such as Jira, Confluence, and Smartsheet — must be evaluated not only for its functional suitability but also for its compliance profile, audit trail capabilities, and data integrity guarantees. GAMP 5 aims to protect patient safety, product quality, and data integrity by facilitating and encouraging the achievement of computerized systems that are effective, reliable, and of high quality. This elevated quality bar distinguishes the pharmaceutical context from other nonprofit or public sector environments and adds a layer of complexity to the implementation of project management tools that would not be present in less regulated settings.

3.3 Operational Challenges as a Small Nonprofit

Operating as a small nonprofit in a complex regulatory environment exposes EMVO to a set of challenges that are well documented in the literature on small nonprofit management. Small nonprofit organizations that form the backbone of charitable and educational work still largely operate without structured project management approaches, facing numerous special conditions compared to their for-profit counterparts. In EMVO's case, these challenges are compounded by the technical complexity of its infrastructure and the high accountability demands of its regulatory role. Limited human resources mean that staff members frequently manage multiple responsibilities simultaneously, reducing the organizational slack available for change initiatives such as the adoption of new project management tools. Furthermore, the nonprofit governance model — in which strategic decisions require alignment across a diverse group of founding stakeholders — can introduce additional layers of complexity into operational decision-making.

The period in which this analysis takes place must be understood within a broader historical context that profoundly shaped the priorities of the pharmaceutical sector. The COVID-19 pandemic, which began in early 2020, represented an unprecedented stress test for healthcare and pharmaceutical organizations worldwide. The pandemic impacted the pharmaceutical industry in multiple ways, including supply chain disruptions, delayed treatments, and strained healthcare budgets, forcing organizations to rapidly adopt digital technologies to overcome these challenges. The COVID-19 pandemic in particular accelerated trends such as the adoption of digital health technologies, highlighting the need for an adaptable and resilient operational infrastructure. For an organization like EMVO, whose mandate is intrinsically linked to the integrity of the pharmaceutical supply chain, these pressures were felt acutely.

Among the most significant consequences of this accelerated digitalization was a sharp increase in cybersecurity risk. The rapid shift from office-based to remote work caused by the pandemic significantly increased cyber risk, as the high speed of transition meant that many IT security teams had insufficient time to install adequate security defenses. In the healthcare sector specifically, cyberattacks more than doubled in 2020, with pharmaceutical and healthcare organizations being targeted for the theft of sensitive personal and intellectual

property data. Real-world incidents such as the 2020 cyberattack on a cold storage provider that disrupted vaccine supply chains during the pandemic exposed the fragility of pharmaceutical distribution networks, underscoring the critical importance of software reliability and system resilience.

This context is directly relevant to EMVO's decision to implement structured project management tools during this period. The elevated quality and security standards already required by the pharmaceutical sector — as outlined in the preceding section on GAMP 5 — became even more pressing in the post-pandemic landscape. The adoption of tools such as Jira, Confluence, and Smartsheet was therefore not merely an operational improvement initiative, but a response to a broader industry-wide demand for greater traceability, collaboration reliability, and digital resilience in a sector operating under extraordinary pressure.

The next chapter will be focused on a brief introduction of the project history, a definition of the path to be followed to bring the situation from an actual state (AS IS) to the desired one.

The process can be divided into three main parts, the first one is the analysis of the actual context and all the meaningful information that can be obtained (Data Gathering and Analysis). The second step is the market research with all the details obtained before. This part is crucial because it is the first interaction with the provider, that will be the Subject Matter Expert for the implementation (on software side), the person or the team that will assist EMVO in his transaction to PMIs can decide the success or the failure of the implementation.

The last step is the implementation itself and the period of training and maintenance that followed the implementation. Most of the time, as the ADKAR methodology underlines, this last step is considered not needed or it has not the right importance, so users can find themselves lost with a new tool that they can not use and that will fall in disuse for this reason.

Every single step matters, every risk and opportunity needs to be analyzed.

4. Project History

4.1 Project Overview

By the time the project management implementation initiative was launched, EMVO had been operational for approximately five years. To understand the significance of this moment in the organization's history, it is useful to frame it within the theoretical lens of organizational life cycle models. Larry Greiner, in his seminal Harvard Business Review article "Evolution and Revolution as Organizations Grow," argues that organizations pass through a sequence of relatively stable evolutionary phases, each of which eventually generates its own crisis that propels the organization into the next stage of development. Greiner identified five phases of growth — creativity, direction, delegation, coordination, and collaboration — each characterized by a dominant management approach that eventually becomes ineffective, triggering a period of crisis and transition.

A complementary perspective is offered by Ichak Adizes, whose organizational lifecycle model provides a more granular framework for understanding how organizations evolve over time. Adizes theorized that all organizations, like living organisms, go through predictable and repetitive patterns of behavior as they grow and develop, transitioning through ten distinct stages from courtship to death. Of particular relevance to the EMVO case are the stages Adizes terms "Go-Go" and "Adolescence." The Go-Go stage is characterized by rapid growth without sufficient control systems, where everything looks interesting and management gets involved with perceived opportunities which, in retrospect, are revealed to be threats that should have been avoided. This is followed by the Adolescence stage, which Adizes describes as the "second birth" of the organization, when professional management systems are put in place and taken over from the founder — a stage full of conflict and inconsistency between entrepreneurial drive and the organization's growing need for control. The transition between these two stages is precisely the juncture at which the need for structured project management tools tends to emerge most acutely, as informal methods that sustained the organization in its early growth phase become insufficient to support increasing operational complexity.

Both Greiner's and Adizes's models converge on a common insight that is directly applicable to the EMVO context: organizations in transition — critical junctures in the lifecycle process — need a change in management strategy, and lifecycle analysis helps by providing order, clarity, and a path forward. For EMVO, this transition manifested concretely in the Operations department. Having successfully delivered its primary mandate — the establishment and operationalization of the European Hub — the organization was entering a new phase characterized by a growing portfolio of concurrent projects and increasing demands on internal coordination. Individual team members and departments were operating with fragmented tools and informal methods, a situation that had been manageable during the founding phase but was becoming increasingly unsustainable.

The appointment of a new Head of Operations proved to be the catalytic moment. With a forward-looking perspective on internal IT governance, the new manager assessed the department's working practices and identified a critical structural gap: the absence of a shared, structured information system capable of supporting the team's evolving needs. Knowing where an organization stands within its lifecycle provides a lens through which management can frame critical conversations and inform strategic decisions. It was precisely this awareness that drove the launch of two parallel and interconnected workstreams: the systematic mapping of all organizational processes, and the evaluation and selection of the most suitable PMIS to be implemented across the organization.

The potential benefits of such a system for an organization at EMVO's stage of development are well documented in the literature. When effectively developed and implemented, a PMIS significantly reduces time and effort, enhances coordination, and fosters more sustainable project management practices. At the individual level, empirical research confirms that improvements in effectiveness and efficiency in managerial tasks can be observed in terms of better project planning, scheduling, monitoring, and control, as well as timelier decision-making. At the organizational level, research shows that organizations with mature project management practices meet their goals 2.5 times more often than those without, and high-performing organizations waste 28 times less money by avoiding rework and delivering projects efficiently. Beyond performance metrics, a PMIS also addresses the specific coordination challenges that emerge during organizational growth: it provides a centralized

repository for all project-related information, ensuring that everyone involved has access to the most up-to-date data, and should be scalable to accommodate the growth of projects and handle larger teams and evolving project complexities. For EMVO, operating in a regulated environment where traceability and documentation are not optional but mandated, these benefits carried additional weight — a structured PMIS would not only improve operational efficiency but also strengthen the organization's capacity to meet its compliance obligations consistently and at scale.

4.2 Stakeholder Analysis

Effective stakeholder management is widely recognized as one of the most critical dimensions of any project management initiative. Cleland introduced stakeholders and stakeholder management processes to the project management canon by highlighting the importance of stakeholder identification, classification, analysis, and management approach formulation. More recently, PMI put forward a definition of project success centered on stakeholder perception, stating that for a project to be considered successful, key stakeholders must perceive that the project's outputs provide sufficient value relative to the perceived investment of resources. Empirical research further confirms that stakeholder involvement is strongly correlated with project success, with project managers consistently reporting that greater involvement has resulted in more successful projects. In the context of the EMVO PMIS implementation, the stakeholder landscape was shaped by the small size of the organization, which meant that a relatively limited number of actors held significant influence over both the decision-making process and the ultimate adoption of the new tools.

4.2.1 Decision-Making Stakeholders

At the highest level of the decision-making hierarchy, the initiative was driven by the Head of Operations, who identified the need for a structured PMIS and formally launched the project. The decision to proceed with the implementation was aligned with — and likely endorsed by — the General Manager of EMVO, the highest executive authority within the organization below the Board of Directors. This top-down sponsorship was a critical enabler of the project, as it ensured organizational legitimacy and resource allocation from the outset. The final

vendor selection decision was made through a formal meeting involving three key figures: the Head of Operations, the Change Manager, and the head of the PMO department. This tripartite decision-making structure ensured that the final choice reflected operational, organizational, and project management perspectives simultaneously.

The author of this study served as the Project Manager responsible for leading the implementation, operating within the PMO department under the direct supervision of the PMO Manager, who participated actively in key decisions throughout the process. This dual role — as both a practitioner embedded within the organization and the researcher conducting this analysis — provides a unique insider perspective on the dynamics that shaped the implementation, while also requiring methodological transparency regarding potential observer bias.

It is important to note, however, that the vendor selection process was not discretionary but governed by a formal procurement procedure. As a nonprofit organization, EMVO was required to conduct an official Bid process, issuing a Request for Proposal (RFP) to all potential vendors on equal terms. This formal tendering requirement represents one of the distinctive constraints that differentiate nonprofit procurement from its for-profit counterpart, where vendor selection can often be conducted more informally and with greater flexibility. The RFP process imposed a structured and transparent evaluation framework, ensuring that all candidates were assessed against the same criteria and that the final decision could be formally justified. While this procedure strengthens the objectivity and accountability of the selection outcome, it also introduces rigidity into the process — limiting the organization's ability to engage in iterative negotiation or to rapidly pivot toward a preferred vendor based on emerging information. This tension between procedural compliance and operational flexibility is a recurring theme in nonprofit project management literature and, as will be discussed in the following sections, had direct implications for both the timeline and the dynamics of the vendor selection phase.

This part of section and bid will be explained further again later on in the work.

4.2.2 Operational Stakeholders

The teams that would interact directly with the new tools represented a diverse set of operational profiles, each with distinct needs and expectations. Two primary IT project teams were identified as the main end users: one dedicated to the European Hub, EMVO's core operational infrastructure, and one focused on AMS (Alert Management System), a separate but related workstream. Each team operated under the leadership of a dedicated Project Manager and followed a hybrid methodology: a Waterfall framework governed the overall project lifecycle, structured around formal Gates that defined key delivery milestones, while individual PMs retained the flexibility to adopt Agile — and specifically Scrum — methodologies within the phases between Gates. This hybrid approach reflected a pragmatic balance between the compliance-driven rigidity required by EMVO's regulatory environment and the iterative flexibility preferred by technical teams managing complex, evolving deliverables.

The Quality Assurance (QA) team represented a stakeholder group with a more indirect relationship to the new tools. While QA processes were intrinsically linked to the work managed through the PMIS — given the pharmaceutical sector's stringent requirements for traceability and documented evidence — the team was not identified as a primary user group in the initial implementation phase. However, the degree of interoperability between the new PMIS and the software systems already in use by the QA team was recognized as a critical factor: the smoother the integration, the lower the friction for this stakeholder group and the higher the likelihood of broader organizational acceptance.

Finally, the Customer Support team — operating across first and second level support functions — was identified as a peripheral but nonetheless relevant stakeholder group. Their interaction with the new tools would be indirect, mediated through the ticketing system connected to the AMS workstream. While this group would not require deep proficiency with Jira or Confluence, ensuring that the ticketing integration was seamless and did not disrupt existing support workflows was an important consideration during the configuration phase.

4.2.3 Stakeholder Complexity and the Small Organization Context

As per PMI, stakeholder analysis requires the identification of all potential stakeholders and their relevant information — including roles, interests, knowledge levels, expectations, and influence levels — followed by an assessment of their potential impact on the project. In a small organization like EMVO, this process carries a distinctive character compared to large corporate environments. The limited headcount means that individual stakeholders often hold multiple roles simultaneously, that informal relationships carry significant weight alongside formal hierarchies, and that the impact of any single individual's resistance or enthusiasm on the overall project outcome is disproportionately high. Qualitative evidence from project management research confirms that extensive stakeholder involvement is critical to the success of IT implementation projects — a finding that in the EMVO context translated into a deliberate effort to engage all affected teams early in the process, map their specific needs during the analysis phase, and involve key representatives in the vendor evaluation discussions.

4.2.4 The External Vendor as a Key Stakeholder

Beyond the internal stakeholder landscape, the implementation process involved a critical external actor: the Atlassian Solution Partner selected through the formal Bid process. Atlassian, the company behind Jira and Confluence, does not typically engage directly with end-customer organizations for implementation and licensing services. Instead, it operates through a structured ecosystem of Solution Partners — certified organizations that provide advanced Atlassian product knowledge, product configuration expertise, and customized implementation services. These partners offer tiered levels of expertise and commitment, ranging from foundational product knowledge to highly specialized, deeply certified practices, and serve as the primary point of contact for licensing negotiations, configuration, training, and ongoing support.

For EMVO, the selection of the right Solution Partner was therefore as consequential as the selection of the tools themselves. The partner's role extended across three interconnected dimensions. First, at the licensing level, the partner acted as an intermediary between EMVO and Atlassian, advising on the appropriate license type and tier based on the organization's

size, user profiles, and usage requirements — a particularly nuanced negotiation given EMVO's nonprofit status and constrained budget. Partners assist in planning budgets and aligning license terms, ensuring the solution fits each organization's specific needs. Second, at the commercial level, pricing for Atlassian products is not fixed but varies depending on the partner, the license volume, and the specific configuration of services included — meaning that the choice of partner directly influenced the overall cost of the implementation. Third, and most critically for the purposes of this study, at the implementation level, the quality of the partner's services had a direct bearing on the success of the rollout. The degree to which the partner fulfilled its Service Level Agreements (SLAs) — covering response times, configuration support, issue resolution, and training delivery — determined in large part whether the tools were deployed effectively and whether end users received adequate support during the transition period. A partner that underperforms on SLAs can undermine even a well-planned implementation, creating frustration among end users and eroding trust in the new system at the most critical moment of adoption.

This dynamic positions the external vendor not merely as a supplier but as an active stakeholder in the implementation's outcome — one whose performance, responsiveness, and alignment with EMVO's specific requirements needed to be carefully evaluated during the bid process and actively managed throughout the rollout phase.

4.3 Risk Management

Effective risk management is a cornerstone of sound project management practice. The risk management process occurs in five distinct steps: plan risk management, risk identification, qualitative and quantitative risk analysis, risk response planning, and risk monitoring and control. The PMBOK Guide further emphasizes that modern risk management theory encompasses both negative risks — threats — and positive risks — opportunities — recognizing that ideal risk management optimizes resource usage while minimizing the negative effects of risks. In line with this framework, a Risk Register was established at the outset of the EMVO implementation project and maintained as a living document throughout its lifecycle. As recommended by PMI, the Risk Register served as a repository for all identified risks, including information about the nature of each risk, its owner, and the mitigation measures associated with it. New risks and opportunities were recorded as they

emerged, ensuring that the document remained current and actionable at every stage of the project.

For each identified risk, a qualitative analysis was conducted to assess two key dimensions: probability of occurrence and potential impact on the project. In a qualitative assessment, probability and consequence are not numerically estimated but are evaluated verbally using qualifiers such as high likelihood or low likelihood — an approach well suited to screening multiple risks when sufficient data is not available to support full quantitative estimation. This methodology allowed the project team to prioritize risks effectively and allocate mitigation efforts where they were most needed, without requiring the extensive data collection that a fully quantitative approach would demand.

4.3.1 Risk 1 — User Resistance and Divergent Working Practices

The most significant risk identified at the outset of the project was the potential for user resistance among the primary end-user groups. The two IT project teams — the EU Hub team and the AMS team — had each developed distinct working methods over time, deeply embedded in the specific tools and processes they had adopted independently. Project Managers within both teams demonstrated a degree of conservatism toward change, a behavioral pattern well documented in the organizational change management literature: qualitative risk assessments consistently identify human and organizational factors as among the highest-impact risk categories in technology implementation projects. The probability of resistance was assessed as high, given the known attachment of both teams to their existing workflows, while the impact was equally rated as high — insufficient user adoption would directly undermine the value of the entire implementation. Mitigation strategies centered on early stakeholder engagement, tailored training programs, and the involvement of key team representatives in the configuration process to foster a sense of ownership over the new tools.

4.3.2 Risk 2 — Data Security and Pharmaceutical Compliance

Operating within the pharmaceutical sector imposed a stringent set of data security requirements that constituted a significant risk dimension for the project. As outlined in the regulatory context section, EMVO's activities are governed by GxP standards and GAMP 5 guidelines, which mandate rigorous controls over the integrity, traceability, and

confidentiality of all data managed through computerized systems. Any breach or non-compliance — whether resulting from inadequate tool configuration, insufficient access controls, or vulnerabilities introduced during the implementation process — would carry severe consequences both for EMVO's operational continuity and for its regulatory standing. The probability of a security incident was assessed as medium, contingent on the rigor of the configuration and validation process, while the impact was rated as critical — reflecting the zero-tolerance environment of the pharmaceutical sector. Mitigation strategies included a formal validation process for each tool, the definition of role-based access controls aligned with GAMP 5 requirements, and the inclusion of security compliance criteria as a mandatory threshold in the vendor RFP evaluation.

4.3.3 Risk 3 — EU Data Residency

A further risk — simultaneously a project requirement and a compliance constraint — concerned the geographical location of the software provider's infrastructure. European data protection regulations, and in particular the General Data Protection Regulation (GDPR), impose strict limitations on the transfer of personal and sensitive data outside the European Economic Area. For EMVO, whose data infrastructure underpins the verification of prescription medicines across 28 EEA countries, the requirement that all data — including cloud-hosted data — remain within EU borders was non-negotiable. The risk of selecting a vendor whose infrastructure did not fully comply with this requirement was assessed as medium in probability but high in impact, as a post-selection discovery of non-compliance would have necessitated restarting the vendor selection process entirely. This risk was addressed directly in the RFP documentation, where EU data residency was established as a mandatory qualifying criterion, automatically disqualifying any vendor unable to provide formal guarantees of EU-based data hosting.

4.4 SWOT Analysis

SWOT analysis is a decision-making technique that identifies the strengths, weaknesses, opportunities, and threats of an organization or project, evaluating its strategic position and identifying internal and external factors that are favorable and unfavorable to achieving goals. In the context of project management, SWOT analysis is used during the project initiation

phase to assess capabilities, priorities, and strategies, thereby improving project planning and increasing the likelihood of success. Applied here to the adoption of a PMIS in a small nonprofit organization, the framework provides a structured lens through which to synthesize the key factors identified across the preceding analysis and risk management phase.

4.4.1 Strengths

The most significant internal strength driving the implementation was the presence of strong top management support. The initiative was formally endorsed by the Head of Operations and aligned with the General Manager's strategic vision for the organization — a factor consistently identified in the literature as one of the most decisive CSFs for any IT implementation project. In a small organization like EMVO, where leadership proximity to operational teams is high, this endorsement carried immediate and visible weight.

A second strength was the organization's lean size itself. While small organizations face resource constraints, their limited headcount also enables faster communication, more direct stakeholder engagement, and a shorter path from decision to action. The implementation team was able to engage directly with all affected users, gather feedback rapidly, and adapt the deployment approach in real time — a degree of agility that would be considerably harder to achieve in a larger organization.

Finally, the availability of a dedicated Change Manager with deep knowledge of EMVO's internal processes represented a significant asset. Their involvement in both the process mapping phase and the vendor selection decision ensured that organizational considerations were embedded in every stage of the implementation, rather than treated as an afterthought.

4.4.2 Weaknesses

The primary internal weakness was the organization's limited resources — both financial and human. The nonprofit budget model constrained the range of vendors and license configurations available, and the small team size meant that implementation responsibilities had to be absorbed alongside existing operational duties. There was no dedicated implementation team; the Project Manager, Change Manager, and PMO Manager each carried this workload in parallel with their regular responsibilities.

A related weakness was the absence of a dedicated IT department capable of managing the technical dimensions of the implementation independently. Configuration decisions, integration challenges, and security reviews all required involvement from staff whose primary expertise lay elsewhere, creating dependency on the external vendor's support team and introducing potential bottlenecks when technical issues arose.

4.4.3 Opportunities

The implementation created a significant opportunity to establish a unified, organization-wide project management culture where none had previously existed. By introducing shared tools and standardized workflows, EMVO had the potential to move from a fragmented operational landscape — where each team operated according to its own methods — toward a coherent and auditable project management framework aligned with PMI standards. SWOT analysis provides direction to the next stages of the change process, and in this case the opportunity extended beyond the tools themselves: the implementation process, by requiring the explicit mapping and documentation of all organizational processes, generated institutional knowledge that had never previously been formalized.

A further opportunity lay in the scalability of the chosen tools. Both the Atlassian suite and Smartsheet are designed to grow with their user base, meaning that the infrastructure put in place during this implementation could accommodate future organizational expansion without requiring a further platform change. For an organization entering a growth phase, this represented a strategic investment with a return horizon extending well beyond the immediate implementation period.

4.4.4 Threats

The most significant external threat was the heightened cybersecurity risk environment created by the COVID-19 pandemic, as discussed in the preceding sections. The accelerated shift to remote and hybrid working, combined with the pharmaceutical sector's elevated profile as a target for cyberattacks, meant that the implementation was taking place at a moment of unusually high exposure. Any vulnerability introduced during the configuration or rollout phase carried potential consequences that extended beyond internal disruption to the integrity of EMVO's regulatory infrastructure.

A second threat was the risk of vendor dependency. By selecting a specific Atlassian Solution Partner and committing to a defined set of tools, EMVO became reliant on the continued performance, availability, and commercial stability of both the software vendor and the implementation partner. In a small organization without the internal expertise to independently manage or migrate these platforms, a deterioration in vendor service quality or a change in commercial terms would represent a significant operational risk with limited short-term mitigation options.

4.5 Phase 1 — Needs and Context Analysis

The first phase of the implementation project was dedicated to a systematic analysis of EMVO's existing processes, working practices, and tool landscape. Lasting approximately two months, this phase was designed to produce a clear and documented picture of the organization's current state — a necessary prerequisite for defining the functional requirements that any new PMIS would need to satisfy. The analysis was conducted through a combination of direct observation and structured dialogue with key stakeholders, with the Change Manager playing a central role as Subject Matter Expert. Given the Change Manager's deep familiarity with EMVO's internal operations and organizational culture, their involvement was instrumental in accelerating the mapping process and ensuring that the resulting documentation accurately reflected the reality of day-to-day working practices across all affected teams.

4.5.1 Process Mapping Methodology

The primary tool used to document existing processes was the Swim Lane Diagram, produced using Microsoft Visio. A Swim Lane Diagram is a process flow diagram that visually distinguishes job sharing and responsibilities for a business process, differing from other flowcharts in that processes and decisions are grouped visually by placing them in lanes, with one lane representing a person, department, or organization. This structure allows for a clear depiction of how tasks flow between different functional areas, making it easier to identify handoffs, bottlenecks, and areas for improvement — and can highlight redundancies between different lanes, such as different departments performing the same task. First introduced as a formal methodology by Rummler and Brache in their 1990 work *Improving*

Performance, Swim Lane Diagrams have since become a widely adopted standard in business process analysis and are fully aligned with Business Process Modeling Notation (BPMN) conventions.

For each process analyzed, the current state was first documented as-is through direct observation and discussion with the relevant team members. The resulting diagrams were then reviewed collaboratively with the Change Manager and the stakeholders involved, allowing for validation, correction, and the identification of inefficiencies that might not have been visible from a single vantage point.

4.5.2 Processes Mapped

The analysis covered four main process areas, each corresponding to a distinct operational domain within EMVO:

The first was the **Alert Management System (AMS) process**, covering how alerts generated within the EMVS were received, triaged, escalated, and resolved by the AMS team. Given the regulatory sensitivity of alert management in a pharmaceutical verification system, this process required particular precision in its documentation, as any gaps or ambiguities in the workflow could carry compliance implications.

The second was the **interaction between Product teams and the QA team**, mapping the touchpoints, handoffs, and approval gates that governed the relationship between technical delivery and quality assurance. This cross-functional process was especially relevant to the tool selection, as any new PMIS would need to support these interactions seamlessly without introducing friction into an already complex coordination dynamic.

The third was the **documentation management process**, which examined which software tools were being used to create, store, share, and version-control project documentation, and which stakeholders were involved at each stage. This mapping revealed a fragmented landscape of tools — including SharePoint and Microsoft Teams — that had accumulated organically over time without a unified governance framework.

The fourth was the **Waterfall project lifecycle process**, documenting the full sequence of phases, Gates, required deliverables, and approvals that governed the management of formal

projects within EMVO. This end-to-end map clarified which documents were required at which stage, which roles were responsible for their production and approval, and where bottlenecks or redundancies existed in the current workflow.

4.5.3 Gaps and Requirements Identified

The analysis phase surfaced a set of significant gaps that would directly inform the requirements for the new PMIS. The most pervasive finding was the absence of uniformity across the organization: each team had independently developed its own tools and methods, resulting in a fragmented operational landscape where practices varied substantially from one department to another. This lack of standardization not only created inefficiencies in cross-team collaboration but also made it difficult to maintain a consistent and auditable record of project activities — a particularly problematic shortcoming given EMVO's regulatory obligations.

A secondary finding was the presence of redundant and unnecessary process steps, identified through the Swim Lane analysis as activities that added no value to the process outcome and represented pure overhead. Opportunity flowcharts used in business analysis group process steps into value-added and non-value-added activities, helping to determine which parts of a business process produce value and which represent waste — a lens that proved useful in rationalizing several workflows during this phase.

A third and particularly critical gap was the absence of a centralized, shared knowledge repository. While Microsoft SharePoint and Microsoft Teams had been in use as informal documentation and communication platforms, both tools were increasingly showing their limitations in this role. Beyond functional constraints — such as insufficient support for the granular role-based access controls required in a regulated pharmaceutical environment — there were growing concerns about their adequacy from a cybersecurity standpoint. The inability to enforce specific permission structures and audit trails meant that neither tool could reliably meet the traceability and access governance requirements that EMVO's operational context demanded.

Collectively, these findings pointed toward a clear set of requirements for the new PMIS: it needed to provide a unified, centralized platform capable of supporting diverse working

methodologies, enforce robust role-based access controls, integrate effectively with EMVO's existing software ecosystem, and offer full compliance with the data security and residency requirements outlined in the preceding risk analysis. These requirements formed the foundation of the Request for Proposal issued in the subsequent vendor selection phase.

4.6 Phase 2 — Vendor Selection

4.6.1 The RFP Process as a Nonprofit Obligation

The vendor selection phase was governed from the outset by a formal procurement procedure — a requirement that distinguishes nonprofit organizations from their for-profit counterparts in significant ways. Nonprofits are required to issue an RFP when their internal policies, funders' policies, or applicable regulations mandate one, and RFPs are more frequently issued for complex, highly customized products and services where numerous requirements and multiple types of expertise are involved. In EMVO's case, the procurement of a PMIS — involving licensing, implementation services, training, and ongoing support — clearly fell within this category. Nonprofits are generally required to solicit at least three competitive bids for projects of this nature, ensuring that the selection process is both transparent and defensible to internal governance bodies and external stakeholders.

The RFP document prepared for this process outlined EMVO's business needs, functional requirements, technical constraints, and evaluation criteria in a standardized format distributed equally to all candidate vendors. A well-crafted RFP clearly outlines the project requirements, scope, budget, timeline, submission requirements, and evaluation criteria, and includes instructions for how bidders can ask questions and seek clarifications during the bidding process. This standardization is not merely procedural — it ensures that all vendors are assessed on a level playing field, eliminating the risk of preferential treatment and strengthening the organization's accountability to its governance structure.

4.6.2 Vendor Identification and Pre-Qualification

Given that the tools under consideration — Jira and Confluence — are Atlassian products, and Smartsheet is a separate tool, the vendor search was focused on certified members of the Atlassian Solution Partner ecosystem for the first two cited, while Smartsheet has been

evaluated against other similar tools (g.e. MS Project). Solution Partners are certified organizations that provide advanced Atlassian product knowledge, product configuration expertise, and customized implementation services, and are tiered into program levels — from foundational to Gold and Platinum — reflecting their depth of expertise and commitment to the platform. Targeting Gold and Platinum Partners specifically was a deliberate strategy to ensure that shortlisted vendors possessed the technical maturity and certified competencies required for a compliant implementation in a regulated environment.

A first round of pre-qualification eliminated candidates that did not meet EMVO's non-negotiable baseline requirements. The most significant filter was the EU data residency requirement: vendors whose infrastructure — whether physical servers or cloud hosting — was not exclusively located within European Union borders were immediately disqualified. This constraint, driven by EMVO's obligations under GDPR and its internal data governance policy, substantially narrowed the field, excluding a large portion of the global Atlassian partner market, including many US-based vendors. A second filter addressed licensing granularity: several vendors offered packages with minimum user thresholds of fifty licenses or more, which were incompatible with EMVO's lean organizational structure of approximately thirty employees. Vendors unable to accommodate the organization's actual license volume at a proportionate cost were similarly excluded.

4.6.3 Evaluation Matrix and Shortlisting

Approximately ten vendors submitted responses to the RFP and were evaluated using a structured vendor selection matrix. A vendor selection matrix is a decision-making tool that makes it easier to compare suppliers by using criteria that matter most to the organization, offering a clear visual that outlines how each vendor scores on pre-defined, measurable criteria so that the final decision is backed by data rather than gut feeling. The evaluation criteria were organized around four primary dimensions: the range and quality of services offered, the cost per license and overall commercial proposal, the quality and scope of implementation support, and the depth of training provisions for end users. Involving a cross-functional review team — encompassing procurement, IT, operations, and legal perspectives — minimizes bias and ensures that all requirements, from technical to financial and regulatory, are adequately represented in the evaluation. In EMVO's case, the evaluation

was conducted collaboratively by the Project Manager, the Change Manager, and the Head of Operations, bringing together implementation, organizational, and operational perspectives.

From the full pool of respondents, a shortlist of two to three vendors was identified based on the matrix scores, representing the most competitive offers across all evaluated dimensions.

4.6.4 Final Selection and SLA Negotiation

The shortlisted vendors were invited to a dedicated call — attended by the Head of Operations, the Change Manager, and the PMO Manager — to clarify the details of their proposed Service Level Agreements and to allow the evaluation team to assess the quality of the working relationship that would develop during implementation. This final stage of the process reflects a well-established principle in procurement practice: vendor assessment criteria should support the organization's mission and business goals across dimensions of technical competence and quality, cost and financial integrity, ability to communicate, and cultural commitments. The interpersonal dimension of this final call was treated as a deliberate evaluation criterion — in a small organization where the implementation team would need to collaborate closely with the vendor over an extended period, cultural fit and communication quality were considered as important as technical capability.

The final selection decision was made following this meeting, with the chosen vendor satisfying all pre-qualification requirements, scoring competitively across the evaluation matrix, and demonstrating clear alignment with EMVO's operational context and communication expectations. The outcome of the process was the appointment of an EU-based Atlassian Gold or Platinum Solution Partner to supply and support the Jira and Confluence licenses.

4.7 Phase 3 — Rollout and Implementation

4.7.1 Deployment Strategy: A Phased Approach

The rollout of Jira, Confluence, and Smartsheet at EMVO was conducted through a deliberate phased deployment strategy, rather than a simultaneous organization-wide launch. This choice reflects a well-established principle in implementation management: organizations that implement new technology in phases report significantly higher user adoption rates than

those that attempt immediate company-wide deployment, as the phased approach minimizes disruption while maximizing the chances of effective implementation. A phased implementation allows the organization to choose which departments or teams should first gain access to maximize benefits and minimize transition difficulties, with incremental changes, smaller training groups, and better testing leading to an increase in user adoption.

The deployment began with a limited set of trial licenses, used by the Project Manager and the PMO Manager to build an initial Confluence environment. This pilot phase served a dual purpose: it allowed the implementation team to develop familiarity with the tool's configuration capabilities and to construct a working prototype of the knowledge repository that could be demonstrated to skeptical users. Rather than presenting the tool as an abstract concept, the team was able to showcase a concrete, functioning environment tailored to EMVO's actual workflows — a strategy that proved effective in demonstrating the practical value of the system to those most resistant to change. A phased approach eases the learning curve and simplifies training, giving users the opportunity to focus on mastering the basics before moving on to more complex elements, reinforcing their confidence — especially when onboarding a technically complex product. As user appetite for the tool grew and early adopters began to experience its benefits firsthand, additional licenses were progressively allocated, allowing the deployment to expand organically in response to demonstrated demand rather than through top-down mandate.

4.7.2 Training and Vendor Support

The training program designed for the rollout combined multiple complementary modalities. Formal training sessions provided structured introductions to the tools' core functionalities, establishing a shared baseline of knowledge across all user groups. These were supplemented by online training resources, allowing staff to revisit content at their own pace and according to their individual learning needs. Critically, the implementation also benefited from hands-on support provided directly by the vendor's customer success team, who remained actively engaged throughout the rollout period to ensure that the tools were configured and used to their full potential.

This multi-modal approach reflects best practices documented in the change management literature. Within the ADKAR framework introduced in Chapter 2, the training phase directly addresses the Knowledge (K) and Ability (A) building blocks — ensuring that users not only understood how to use the new tools but developed the practical competency to do so confidently in their daily work. The sustained presence of the vendor's support team also contributed to the Reinforcement (R) dimension of the model, providing an external resource that users could turn to when encountering difficulties, thereby reducing the risk of regression to previous working habits.

4.7.3 Managing User Resistance

As anticipated during the stakeholder analysis, user resistance represented the most significant human challenge of the rollout phase. Staff members who had developed established personal workflows over time showed reluctance to adopt new tools that required them to alter familiar routines. This dynamic is consistent with Lewin's model of organizational change, which identifies the unfreezing of existing behaviors as the most critical and difficult stage of any change initiative — particularly when those behaviors are deeply embedded in an organization's informal culture.

The approach taken to manage this resistance was deliberately non-coercive. Rather than enforcing adoption through top-down directives, the implementation team focused on building intrinsic motivation by demonstrating concrete, relevant benefits. Hands-on sessions allowed resistant users to experience the tools directly in scenarios drawn from their own work, making the value proposition tangible rather than theoretical. Early adopters who discovered productivity improvements became advocates, sharing techniques and encouraging their colleagues to make the transition — a dynamic that cultivated internal champions organically and proved more effective than formal mandates in driving sustained adoption. This approach aligns directly with the Desire (D) component of the ADKAR model, which emphasizes that lasting change requires personal motivation rather than external pressure.

4.7.4 Data Migration and Historical Data Challenges

While the rollout did not encounter significant technical failures in the deployment of the tools themselves, the migration of historical project data from legacy systems to the new environment presented a more complex and nuanced challenge. All sensitive project data was maintained in backup servers and separate repositories throughout the transition, ensuring that no information was at risk of permanent loss. However, the process of transferring historical records — including documentation, task histories, and project artifacts from live and ongoing projects — required considerable care and attention to detail.

Data integrity during migration improves when teams define what must migrate and validate record counts before and after the move, as most integrity issues arise when teams move real project data with history, ownership, and structure, rather than clean sample records. In EMVO's case, the stakes were elevated by the fact that several projects were simultaneously live and in active development during the migration period. Poor data quality compounds during migration, potentially creating broken relationships between records and destroying referential integrity that applications depend on — and organizations often discover data quality issues only after beginning migration projects. The loss or misrepresentation of even minor details in historical project records could have introduced errors into active workstreams, with potential downstream implications for project delivery and, given EMVO's regulatory context, for compliance documentation. The migration process therefore required iterative validation, close coordination between the implementation team and the individual project leads, and a cautious, incremental approach that prioritized data integrity over speed of transition.

4.8 Critical Factors Encountered

The implementation process at EMVO surfaced a set of critical factors that collectively shaped the trajectory and outcome of the project. Some of these factors were anticipated during the analysis phase and actively managed from the outset; others emerged progressively during the rollout and required adaptive responses. Together, they represent the empirical core of this study's contribution to the understanding of CSFs in PMIS implementation within small nonprofit organizations.

4.8.1 User Resistance and the Slow Build of Adoption

The most pervasive and persistent challenge throughout the implementation was the resistance of end users to abandoning established working habits in favor of the new tools. As discussed in the rollout phase, this resistance was addressed through a non-coercive strategy centered on demonstrating tangible value rather than enforcing compliance. However, it is important to acknowledge that this approach came with a trade-off: the adoption curve was inherently slow. The tools did not produce an immediate transformation in working practices, and a significant investment of time and effort was required to build an environment sufficiently appealing to motivate voluntary uptake.

This dynamic is well captured by the ADKAR model's emphasis on Desire as a prerequisite for Knowledge and Ability — without personal motivation to change, even the most well-designed training program will fail to produce lasting adoption. In EMVO's case, building that desire required the creation of a demonstrably useful Confluence environment before users were even asked to engage with the tool, effectively inverting the typical deployment logic: the value had to be proven before adoption could be requested. This represents an important nuance for small organizations, where the absence of hierarchical pressure to comply makes the quality of the value proposition even more critical to implementation success.

4.8.2 Software Integration Challenges

A second significant factor was the partial incompatibility between the newly introduced tools and certain software systems already embedded in EMVO's operational ecosystem. Veeva, a cloud-based platform widely used in the pharmaceutical and life sciences sector, represented a particularly relevant integration challenge. Veeva is purpose-built to meet the specific content and data management needs of the life sciences industry, including comprehensive audit trails and electronic signatures aligned with GxP requirements such as FDA 21 CFR Part 11 and EU Annex 11. While Veeva supports integrations through open REST-based APIs compatible with middleware tools such as MuleSoft, Tibco, and Informatica, achieving seamless data flow between Veeva and the Atlassian suite required dedicated configuration work that was not part of the standard implementation scope.

The absence of a native, out-of-the-box integration between the two platforms meant that the implementation team had to identify and implement workaround solutions to ensure that information could flow adequately between systems without creating data silos or requiring manual duplication of effort. This experience underscores a critical success factor identified in the requirements analysis phase: the importance of evaluating not just the functional capabilities of a new PMIS in isolation, but its interoperability with the full software ecosystem already in place within the organization. In a regulated environment like EMVO's, where data integrity and traceability must be maintained across all systems simultaneously, integration gaps carry compliance implications that extend well beyond mere operational inconvenience.

4.8.3 Cybersecurity and the Pandemic Context

The implementation took place during an exceptionally demanding period for the pharmaceutical sector, with the COVID-19 pandemic having significantly heightened both the operational pressures on healthcare-related organizations and the cybersecurity risks associated with accelerated digital transformation. As noted in the contextual analysis, cyberattacks on healthcare and pharmaceutical organizations more than doubled in 2020, and the rapid shift to remote and hybrid working had expanded the attack surface available to malicious actors. For EMVO — an organization managing critical data infrastructure underpinning the verification of prescription medicines across 28 EEA countries — the implications of a security breach extended far beyond internal operational disruption, carrying potential consequences for the integrity of the European pharmaceutical supply chain.

This context translated into a heightened level of scrutiny applied to every aspect of the implementation. Security requirements that might have been treated as standard compliance checkboxes in a less sensitive environment became active design constraints: access control configurations, audit trail settings, data encryption standards, and user permission structures were all reviewed with a level of rigor commensurate with the organization's risk exposure. The EU data residency requirement, already identified as a vendor pre-qualification criterion, was equally a cybersecurity measure — ensuring that all data remained within a regulatory jurisdiction whose standards EMVO could verify and trust. This factor reinforced the

importance of aligning PMIS selection and configuration with the broader risk management framework of the organization, rather than treating the tool implementation as an isolated IT project.

4.8.4 EU Data Residency as a Structural Constraint

The requirement that all data and hosting infrastructure remain within European Union borders functioned throughout the project as both a compliance obligation and a strategic constraint. As established in the vendor selection phase, this requirement substantially narrowed the pool of eligible Solution Partners and shaped the entire procurement process. Its implications, however, extended beyond vendor selection into the configuration and ongoing management of the tools. Cloud infrastructure decisions, data backup policies, and integration architectures all needed to be verified against this requirement, adding a layer of governance overhead that would not be present in organizations operating under less stringent data sovereignty obligations.

This factor is particularly noteworthy in the context of small nonprofit organizations, which typically lack dedicated legal and compliance teams capable of independently verifying vendor claims regarding data residency. At EMVO, this verification responsibility fell on the implementation team itself, requiring a level of technical and regulatory diligence that represented a significant additional burden on a lean organizational structure.

4.8.5 Building the Environment Before Driving Adoption

A final and somewhat counterintuitive critical factor was the recognition that the implementation depended not on the quality of the tools alone, but on the quality of the environment built within them before users were invited to engage. The decision to invest significant effort in constructing a well-organized, visually coherent, and functionally useful Confluence workspace prior to the broader rollout proved to be a decisive enabler of adoption. Users who were shown a polished, functional environment were substantially more receptive than those who had previously encountered empty or poorly configured tool instances.

This finding has direct implications for the sequencing of PMIS implementations in small organizations: the preparation of the tool environment should be treated as a distinct and resource-intensive project phase in its own right, rather than as a background activity running in parallel with user onboarding. In the ADKAR framework, this preparation work directly supports the Awareness (A) and Desire (D) stages — making the case for change concrete and credible before any training or formal adoption process begins.

5. Discussion

5.1 The PMIS as an Information Radiator: Structuring Knowledge in a Small Nonprofit

A central insight emerging from the EMVO case study is that the most significant value delivered by the PMIS implementation was not operational efficiency in the narrow sense, but the transformation of the organization's relationship with its own information. Prior to the implementation, knowledge at EMVO was fragmented, tacit, and localized — residing in individual working habits, informal tools, and undocumented practices that varied substantially across teams. The introduction of Jira, Confluence, and Smartsheet fundamentally altered this dynamic by creating a shared, persistent, and visible infrastructure through which project information could be continuously emitted, accessed, and built upon by all members of the organization.

This dynamic is most precisely captured by the concept of the Information Radiator, coined by Alistair Cockburn in 2001 as part of an extended metaphor equating the movement of information with the dispersion of heat and gas. Cockburn coined the term to emphasize the crucial role of making project information visible and easily accessible, drawing parallels between a radiator that continuously emits warmth and a system that continuously emits project data to all who need it. In project management, an information radiator allows all stakeholders to view the project's progress at all times, with data that is not static but continually updated as the project progresses and deliverables are completed. While the term originated in Agile contexts — where physical boards and charts served as the primary radiating medium — the underlying principle applies with equal force to a digital PMIS in a hybrid Waterfall-Agile environment such as EMVO's.

The relevance of this concept to the EMVO case is particularly acute given the organization's hybrid methodology. Teams operated within a Waterfall framework governed by formal Gates, while individual Project Managers retained the flexibility to adopt Scrum between milestones. In this context, the PMIS functioned as the connective tissue between these two methodological layers: information radiators enhance transparency, promote accountability, facilitate communication, and help teams stay aligned with their goals and progress —

precisely the functions that were absent from EMVO's pre-implementation landscape and that the new tools were designed to restore. Jira provided the task-level visibility characteristic of Agile information radiators; Confluence served as the persistent knowledge repository that captured and structured the institutional memory generated across both methodological layers; and Smartsheet offered the resource and timeline visibility needed for Waterfall-level governance.

Critically, the PMIS did not merely make existing information more visible — it created the conditions under which information could be systematically generated, structured, and retained in the first place. The process mapping exercise conducted during the analysis phase, the formal documentation of workflows in Confluence, and the migration of historical project data into the new environment all represented acts of organizational knowledge creation that had not previously occurred in any structured form. Information radiators promote transparency, improve communication, and foster collaboration — and their effectiveness increases when information is large, easy to interpret, and accessible to all stakeholders regardless of location. For a geographically distributed team operating in a post-pandemic hybrid working environment, this accessibility dimension was not incidental but central to the implementation's value proposition.

The implication for small nonprofit organizations more broadly is significant. In organizations where lean staffing, informal cultures, and limited IT governance have historically prevented the formalization of project knowledge, a PMIS does not simply improve the management of existing information — it enables the creation of an organizational memory that did not previously exist. This is a qualitatively different value proposition from that typically described in the CSF literature, which tends to focus on efficiency gains and performance metrics. The EMVO case suggests that for small nonprofits at a transitional stage of their lifecycle, the primary return on a PMIS investment may be structural rather than operational: the establishment of an information infrastructure capable of supporting sustainable organizational growth.

5.2 Top Management Support as a Non-Negotiable CSF

The EMVO case provides strong empirical support for one of the most consistently cited CSFs in the project management literature: top management support. The initiative would not have been launched without the strategic vision of the Head of Operations, and its organizational legitimacy was reinforced by alignment with the General Manager's priorities. In a small organization where resource allocation decisions are highly visible and personally consequential, the absence of explicit leadership endorsement would have been immediately perceived by staff — undermining the credibility of the implementation before it began.

This finding is entirely consistent with the literature reviewed in the State of the Art. As established by Lamprou and Vagiona, top management support is among the most cited and significant factors influencing project success. What the EMVO case adds to this established finding is a contextual dimension: in a small nonprofit, top management support is not merely a facilitating condition but a prerequisite for organizational permission. Without it, the procurement process — which required formal authorization at the General Manager level — could not have proceeded, and the cultural change required to shift staff working habits would have lacked the authority needed to overcome institutional inertia.

5.3 User Adoption and Resistance as the Central Implementation Challenge

If top management support determined whether the implementation could begin, user adoption determined whether it could succeed. The EMVO case offers a detailed and instructive account of how resistance to change manifests in a small nonprofit and how it can be effectively managed.

The resistance encountered was not irrational or obstructive — it reflected a rational attachment to established workflows that had served individuals adequately in the past. This is precisely the dynamic that Lewin's unfreezing stage describes: before new behaviors can be established, existing ones must be deliberately destabilized. The implementation team's response — building a demonstrably useful Confluence environment before requesting adoption, and using hands-on sessions to make the value proposition concrete — represents an empirically grounded application of both Lewin's model and the ADKAR framework's emphasis on Desire as a prerequisite for lasting change.

The finding that the tools did not produce an immediate transformation, and that sustained effort was required to build an appealing environment before voluntary adoption became possible, has direct implications for how PMIS implementations in small nonprofits should be planned and resourced. The preparation of the tool environment must be treated as a distinct project phase with dedicated time and resources — not as a background activity. Organizations that underestimate this phase risk launching tools into an organizational vacuum, where the absence of compelling content reinforces skepticism rather than building enthusiasm.

5.4 Cybersecurity and Regulatory Context as Sector-Specific CSFs

A distinctive contribution of the EMVO case to the existing literature is the identification of cybersecurity and regulatory compliance as critical success factors specific to the pharmaceutical nonprofit context — factors that are largely absent from the general CSF literature, which has been developed predominantly in corporate and non-regulated settings.

The elevated cybersecurity requirements of EMVO's operating environment shaped every dimension of the implementation: from vendor pre-qualification, where EU data residency was a non-negotiable criterion that eliminated the majority of the global market, to tool configuration, where role-based access controls and audit trail settings were treated as primary requirements rather than optional features. The COVID-19 pandemic context amplified these pressures further, operating in a period when cyberattacks on pharmaceutical organizations had more than doubled and the shift to remote working had expanded organizational vulnerability.

This finding suggests that the standard CSF frameworks developed in the literature require contextual adaptation when applied to regulated environments. For small nonprofits operating in sectors such as pharmaceuticals, healthcare, or financial services, regulatory compliance and cybersecurity readiness should be elevated to the status of primary CSFs, structuring the entire implementation process rather than being treated as compliance checkboxes to be addressed after the core project decisions have been made. The EMVO case demonstrates that these constraints, while demanding, can be successfully navigated — but only when they

are integrated into the project's strategic framework from the outset rather than managed reactively as obstacles.

6. Conclusions

This study set out to investigate the critical success factors in the implementation of project management tools in a small-sized nonprofit organization, using the European Medicines Verification Organisation as its empirical case. The research question driving the analysis was: what factors determine the success or failure of a PMIS implementation in a small nonprofit operating in a regulated environment, and how do these factors relate to the frameworks established in the existing literature?

The evidence gathered across the analysis, vendor selection, rollout, and post-implementation phases points to a clear and consistent answer. The adoption of Jira, Confluence, and Smartsheet at EMVO was not the result of any single factor but of a convergence of conditions — organizational, human, technical, and contextual — that collectively enabled the implementation to take root and deliver lasting value. Among these, three CSFs emerged as particularly decisive: top management support, which provided the organizational legitimacy and resource authorization without which the project could not have proceeded; deliberate change management, which addressed the human dimension of adoption through a patient, value-driven strategy rather than top-down enforcement; and regulatory and cybersecurity readiness, which shaped every dimension of the implementation from vendor selection to tool configuration and represented a sector-specific CSF largely absent from the general literature.

Beyond the identification of these factors, however, the most significant contribution of this study lies in its reframing of what a PMIS represents for a small nonprofit organization. The EMVO case demonstrates that the primary value of a well-implemented PMIS in this context is not efficiency optimization in the narrow operational sense, but the creation of an information infrastructure — an organizational memory — that did not previously exist. Drawing on Cockburn's concept of the Information Radiator, the study argues that a PMIS in a small nonprofit functions as the connective tissue of the organization: continuously emitting, structuring, and preserving the project knowledge that sustains coordinated action, enables accountability, and supports sustainable growth. For organizations at a transitional stage of their lifecycle — as Greiner and Adizes would predict for a five-year-old nonprofit

entering a phase of expanding operational complexity — this structural function may represent a more fundamental return on investment than any individual performance metric.

The findings of this study are subject to two important limitations that should be acknowledged. The first concerns the nature of the data collection methodology. As both the Project Manager responsible for the implementation and the researcher conducting this analysis, the author occupies a dual role that provides unique depth of access to the case but also introduces the risk of observer bias. Perceptions of what constituted a success factor, what challenges were most significant, and how the implementation process unfolded are necessarily filtered through a single perspective — that of a practitioner embedded within the organization who was actively invested in the project's outcome. Future research on this topic would benefit from multi-perspective data collection, incorporating the views of end users, senior management, and the external vendor to triangulate the findings presented here.

The second limitation relates to data confidentiality. As a regulated organization operating under strict internal governance policies, EMVO imposed constraints on the level of detail that could be disclosed regarding certain internal processes, commercial arrangements, and organizational data. Some aspects of the implementation — including the specific terms of the vendor contract, the precise configuration of security controls, and certain details of the stakeholder decision-making process — could not be described with the granularity that a fully open case study would permit. While every effort has been made to ensure that the analysis is grounded in verifiable and representative evidence, readers should be aware that the account presented here is necessarily partial in ways that the author was not always in a position to fully disclose.

Building on an established body of literature on PMIS implementation and critical success factors, this study explores a context that presents distinctive characteristics: small nonprofit organizations operating in constrained, regulated, and resource-limited environments. The EMVO case suggests that such organizations may benefit not only from the operational advantages of an appropriately selected PMIS, but also from the broader organizational changes that an implementation can enable — potentially shifting working practices from informal and fragmented toward more structured and transparent approaches. It is hoped that the findings presented here may offer a useful point of reference for practitioners navigating

similar implementations, and that they could serve as a starting point for future research aimed at extending existing knowledge of project management tool adoption across a wider range of organizational contexts.

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