The Management of Projects is Improved Through Enterprise Architecture on Project Management Application Systems

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Abstract: From planning to execution, effective project management necessitates a holistic approach that incorporates various aspects. Enterprise Architecture has emerged as a promising method for enhancing project management in the modern era of business complexity. This article examines how employing Enterprise Architecture principles in project management can yield significant benefits. Enterprise Architecture enables project managers to comprehend the interdependencies between the various organizational components by adopting an approach that views the organization as an integrated whole. This improves planning, identification of prospective risks, and more precise decision-making. In addition, Enterprise Architecture provides a holistic view of the technology infrastructure and enterprise architecture, allowing project managers to identify opportunities to optimize extant resources. Moreover, Enterprise Architecture can enhance collaboration between project teams and other departments. Comprehending the interrelationships between organizational components makes communication and problem-solving more efficient. Enterprise Architecture also contributes to designing more adaptable and scalable initiatives, allowing them to better adapt to changing environments. This article investigates actual case studies of organizations that have adopted an Enterprise Architecture approach to project management. As evidence that Enterprise Architecture can be an asset in attaining project objectives, several benefits will be outlined, ranging from cost reduction to increased efficiency. By combining established project management methodologies with Enterprise Architecture principles, professionals can adopt a more comprehensive and strategic approach to attaining successful project outcomes.

Keywords: Enterprise Architecture; Project Management; Organizational Integration; Efficiency; Cost Reduction.

1. Introduction

In an ever-evolving and ever-increasingly complex business, project management has emerged as a significant obstacle for organizations across all industries. Modern projects involve not only planning and execution but also a comprehensive comprehension of an organization's internal and external dynamics. Enterprise Architecture (EA) has emerged as a promising strategy for addressing the complexities of project management in novel and creative ways. Enterprise Architecture is a strategic framework incorporating organizational components, such as business processes, information technology, enterprise architecture, and human resources **Error! Reference source not found.**00. EA enables organizations to see the big picture, identify the interrelationships between the components, and design an integrated future perspective. Although initially recognized in the context of IT, EA has demonstrated its value in all aspects of project management. Successful project management now requires ensuring the project is integrated with the organization's long-term strategy and objectives and adhering to deadlines and budgets. EA plays a central role by providing a unified and comprehensive perspective. By understanding how organizational components interact, project managers can design better solutions, identify risks more precisely, and respond to environmental changes more rapidly.

   In this article, we will examine how the application of Enterprise Architecture principles enhances project management. We will investigate how this strategy can increase productivity, improve collaboration, and produce superior project outcomes. Through case studies and in-depth analysis, we will demonstrate how organizations can combine proven project management methodologies 4), with innovative EA principles to create synergies that generate substantial added value. Throughout this voyage, we will realize how crucial it is to view project management as a short-term objective and an integral part of an organization's evolution toward a sustainable and prosperous future. Project managers can become effective change agents through this strategy, guiding their organizations through change and transformation with greater insight and direction. Project management has expanded beyond its traditional boundaries in response to ever-changing

business challenges and opportunities. Project managers must achieve objectives efficiently and integrate these projects into the organization's overall vision and strategy. In this effort, Enterprise Architecture (EA) emerges as a potent instrument for enhancing project management by providing a structured, holistic, and future-focused approach 0.

This article will examine the central function that EA plays in the context of project management 0. EA, initially created to manage the complexities of information technology within businesses, has evolved into a more extensive and comprehensive instrument. Connecting business processes, technology, and people, EA transcends departmental and divisional boundaries. Thus, EA assists project managers in understanding the prospective impact of the project on the company's entire ecosystem. Adapting to change is a crucial aspect of effective project management. Change is a constant in today's business environment, and projects that cannot adapt rapidly are at risk. EA enables the identification of prospective changes from within and outside the organization and assists project managers in planning appropriate responses. By perceiving projects within the context of the enterprise architecture, project managers can better anticipate the effects of these changes. Using case studies and concrete examples, we will demonstrate how organizations have incorporated EA concepts into project management. We will highlight the advantages generated, such as increased efficiency, improved collaboration, and the ability to produce project outcomes more aligned with the organization's strategic objectives. Thus, this article will demonstrate that EA is not merely a theoretical concept but also a practical instrument that can assist an organization in realizing its vision through targeted and integrated projects.

The following are two examples of potential research queries for the article "How Enterprise Architecture Improves Project Management.". How can applying Enterprise Architecture principles boost the effectiveness and precision of risk management within the context of project management? (First Research Question), How will integrating Enterprise Architecture into project management affect interdepartmental collaboration and the organization's ability to make more informed decisions? (Second Research Question). These two inquiries can help you investigate the real effects of adopting an Enterprise Architecture approach in project management, including the tangible benefits it generates and implementation strategies that can optimize overall project outcomes.

2. Research Method

The present study will employ a mixed methods strategy, integrating both qualitative and quantitative research methodologies, to address the research inquiries that have been formulated. This methodology will give us a complete and profound understanding of how implementing Enterprise Architecture (EA) might enhance project management. The research design employed in this study encompasses a systematic and structured approach to investigating the research question. Initially, this study will use qualitative research methods to comprehensively comprehend how implementing Enterprise Architecture (EA) principles might enhance the effectiveness and precision of risk management within the project management domain. This study will entail conducting comprehensive interviews with project managers, project team members, and experts in enterprise architecture (EA). The acquired data will be subjected to thematic analysis to uncover recurring patterns and significant elements that influence the impact of enterprise architecture in project risk management.

Furthermore, a quantitative methodology will be employed to assess the effects of incorporating enterprise architecture into project management on enhancing cross-departmental collaboration and facilitating more informed decision-making within the organizational context. The survey will be disseminated to multiple project entities, including the project manager, team members, and additional stakeholders. The survey data will undergo statistical analysis to ascertain the correlation between the level of integration of the Enterprise Architecture (EA) and the efficacy of cooperation and project decision-making. The qualitative research sample will comprise project managers from many industries who have successfully incorporated enterprise architecture principles into their projects. The selection of this sample will be based on the assessment of variances in project scale and complexity. The sample population for the quantitative research study will consist of individuals holding the role of project managers, project team members, and other relevant stakeholders who are actively engaged in projects that are impacted by enterprise architecture.

The qualitative interviews will be documented and analyzed using a thematic analysis methodology. The development of the quantitative survey will be informed by the concepts derived from the qualitative study and relevant literature. The survey data will be analyzed using descriptive statistical techniques and regression analysis to ascertain correlations and assess the effects of enterprise architecture (EA) integration on project collaboration and decision-making. The present study could face limitations regarding the availability of appropriate participants and challenges in gathering adequate data. Furthermore, quantifying the effects of alterations in the corporate environment might provide challenges when considering the immediate timeframe. The research technique employed in this study offers a complete understanding of how the integration of Enterprise Architecture might enhance project management. This investigation encompasses an examination of both operational efficiency and the broader organizational implications. Enterprise Architecture is a comprehensive framework that includes an organization's structure, processes, and systems. It provides a holistic view of the organization's current and desired future, enabling effective decision-making and strategic planning. In project management, EA aligns project objectives with the overall organizational goals and ensures that projects are executed to maximize value and minimize risks. By incorporating EA principles and practices, project managers can enhance project

outcomes, optimize resource allocation, and facilitate seamless integration of project deliverables within the broader enterprise. In what manner can the amalgamation of data obtained from qualitative and quantitative research methods contribute to a holistic comprehension of the influence exerted by enterprise architecture (EA) on project management? Are there any potential constraints or challenges that may arise throughout this research?

2.1 Enterprise Architecture

Enterprise Architecture (EA) is a comprehensive and strategic methodology for managing organizations, which entails comprehending, strategizing, and enhancing an organization's overall structure and functioning. The primary objective of EA is to facilitate the realization of an organization's vision, purpose, and strategic goals. Enterprise Architecture (EA) encompasses the harmonious integration of multiple components within a company, such as business processes, information technology, human resources, data, applications, and technological architecture. The primary goal of Enterprise Architecture is to establish a complete and cohesive perspective on the interrelationships and contributions of all organizational components in alignment with the organization's long-term vision and strategy. This facilitates the ability of businesses to enhance decision-making processes, efficiently navigate through periods of change, and attain the necessary adaptability to respond to the dynamic nature of the business landscape.

Some important points regarding Enterprise Architecture include:

1) Organizational Integration: EA helps overcome departmental and divisional silos by integrating different aspects of the organization, identifying the relationships between other elements, and ensuring that all the parts work together to achieve a common goal.
2) Future View: EA does not only look at the current structure but also designs the future view of the organization. This allows organizations to plan their long-term direction and transformation better.
3) Efficiency and Consistency: Organizations can avoid duplication and inefficiencies by designing integrated processes and systems and ensuring consistency across operations.
4) Change Management: EA helps organizations plan and manage change better. This enables organizations to respond quickly to market trends, new technologies, and business challenges.
5) Informed Decision Making: EA provides a better framework for decision-making, as all decisions can be assessed based on how they contribute to the organization's overall goals.
6) Frameworks and Standards: EA involves using frameworks and standards that help direct how the various elements of an organization should be designed and implemented.
7) Better Benefits of Technology: EA helps integrate information technology with business strategy to utilize technology more effectively to support organizational goals.

Enterprise Architecture is not just about technology; it is also about how the organization operates. Organizations can optimize resources, increase collaboration, and become more responsive to rapidly changing market and business environments through this approach.

2.2 Architecture Development Method

The Architecture Development Method (ADM) constitutes an integral component of The Open Group Architecture Framework (TOGAF). The Agile Development Methodology (ADM) is a cyclical approach employed to conceptualize, construct, and sustain enterprise architecture. The Architecture Development Method (ADM) encompasses several stages that aid organizations in developing an architecture that aligns with their business and technical goals. The critical components of the Architecture Development Method (ADM) of The Open Group Architecture Framework (TOGAF) are as follows:

The preliminary phase encompasses the initial architectural design and management (ADM) stage, which entails strategic planning and thorough preparation. During this phase, the scope and objectives of the architecture are established, and the approach for architectural development is determined. Additionally, this process entails the identification of stakeholders, the determination of necessary resources, and the acquisition of management permission and support. Phase A: Architecture Vision: During this stage, an architectural vision is formulated by leveraging the initial comprehension of business and technology objectives. The architectural concept encompasses the overarching perspective and goals of the desired architectural trajectory. Identifying stakeholders and formulating an initial approach to the architecture constitutes a crucial component of this phase. Phase B of the project involves the development of business architecture. This phase is centered on acquiring a comprehensive comprehension of business architecture. As mentioned above, the procedure encompasses constructing models of business processes, discerning business requirements, and establishing an organizational model. The outcome of this phase entails the development of the preliminary business architecture that will serve as the foundation for the overarching architectural concept. Phase C is dedicated to creating designs for information systems architectures, encompassing both data and application architectures. Data architecture includes:

1) Discerning and delineating the pertinent business entities.
2) Establishing the interconnections between data elements.
3) Determining the optimal formats for data storage.
4) Application architecture distinguishes the necessary application systems and determines their manner of interaction.

5) Phase D involves the development of technological architectural design. This process encompasses the identification and evaluation of suitable technologies, the establishment of a comprehensive technical framework, and the formulation of a strategic implementation strategy. The primary objective is ascertaining that the technological infrastructure can accommodate the various business components and applications.

Phase E focuses on identifying opportunities and proposing solutions within the given context. The project's current phase is identifying potential opportunities and developing corresponding solutions to attain the intended architectural outcome. This process entails the examination of the trade-offs associated with different architectural choices, identifying the most appropriate solutions, and formulating an implementation plan. Phase F involves the development of a migration strategy that outlines the transition from the existing architecture to the desired architecture. The comprehensive framework encompasses incorporating implementation plans, delineating timetables, and formulating transition strategies that contain both business and technical dimensions. Phase G, or Implementation Governance, encompasses the crucial task of overseeing the architecture implementation. This entails ensuring that the architectural design is executed following the established plan and that any required modifications are appropriately managed. Phase H of the project encompasses the process of architecture change management. This includes the ongoing evaluation of the implemented architecture's performance, identification of necessary modifications, and the maintenance of its relevance and effectiveness throughout its lifespan. The Architecture Development Method (ADM) in The Open Group Architecture Framework (TOGAF) offers a systematic technique that aids businesses in creating and maintaining an architecture that aligns with their strategic goals. Each stage provides a systematic approach to assist companies in attaining the intended outcomes.

2.3 Project Management

Project management is a systematic and structured method or discipline that encompasses the initiation, planning, execution, monitoring, and closing of projects intended to achieve optimal efficiency and effectiveness. The primary aim of project management is to attain project objectives by considering various limitations, including time, budget, resources, and quality. Project management encompasses the oversight and coordination of several elements within a project, including but not limited to team management, asset allocation, communication strategies, and risk mitigation.
Several essential aspects of project management include:

1) Well-defined Objectives: Each project is characterized by its own set of objectives that need to be accomplished. Project management methodologies facilitate delineating and elucidating these objectives while formulating strategies to achieve them effectively.

2) Planning is an essential aspect of project management, encompassing meticulous identification of tasks, establishing timelines, and allocating resources. The process aids in strategizing the essential actions required to attain the project's objectives.

3) The process of project management entails the allocation of essential human, financial, and physical resources to the project. Additionally, it involves establishing suitable project teams and distributing work to individual team members.

4) Execution refers to the implementation of previously devised plans. Project managers are responsible for overseeing the advancement of projects, managing any modifications that may arise, and ensuring that projects are proceeding in alignment with the established plan.

5) Monitoring and controlling are essential activities in project management, whereby the project manager consistently oversees the project's advancement to guarantee its adherence to established objectives and timelines. In the event of a departure from the selected plan, appropriate measures are implemented to maintain oversight and management of the project.

6) The importance of effective communication must be considered in the context of project management. The project manager contacts various stakeholders, including team members, clients, sponsors, and other relevant parties.

7) Risk management is an integral aspect of project management, encompassing identifying, assessing, and mitigating any hazards that could impede the achievement of project objectives. Preventive and mitigative methods are strategically devised to minimize the potential consequences of a risk.

8) Project Closure: Upon attaining the project's objectives, the project is formally concluded. This process encompasses the assessment of project outcomes, the provision of funds for outstanding tasks and financial management, as well as the documentation of insights gained from the project.

Implementing project management is crucial for effectively navigating the intricacies inherent in contemporary undertakings. This practice facilitates the alignment of efforts, maximizes resource use, and guarantees achieving desired project outcomes. Various project management methodologies are employed globally, each characterized by distinct approaches and principles. Several often-used methods include:

1) The waterfall methodology encompasses a linear and sequential approach to project development 0. Each stage must be fully accomplished before the commencement of the subsequent stage. This solution is appropriate for projects with well-defined needs and few anticipated modifications before the initial planning phase.

2) The Agile approach is characterized by its high flexibility and emphasis on iterative and incremental development 0. Projects are typically segmented into brief sprints, during which the development process proceeds while incorporating user feedback. Several Agile frameworks, such as Scrum, Kanban, and Extreme Programming (XP), are commonly utilized in various industries.

3) Scrum is an extensively utilized Agile methodology that involves dividing projects into brief iterations called sprints 0. Each sprint typically ranges from 2 to 4 weeks, during which a distinct and functional portion of the project is developed, allowing stakeholders to evaluate and analyze its progress.

4) Kanban is a visual methodology utilized for the management of workflow 0. The method visually represents activities through cards arranged on a board. The allocation of resources and the order in which tasks are addressed are determined by the team's capacity and the relative importance of each lesson.

5) The Lean methodology is centered around minimizing waste within the production or development process. This approach has the potential to be implemented across various contexts, including the field of project management.

6) PRINCE2, or Projects IN Controlled Environments, is a widely adopted project management methodology, particularly prevalent in Europe. The approach emphasizes meticulous planning and control while structuring projects into well-defined stages.

7) The Project Management Body of Knowledge (PMBOK) is a set of rules and standards established by the Project Management Institute (PMI). This document is an extensive manual on project management practice, encompassing various topics and facets within the field.

8) Hybrid Approach: Certain businesses employ a mixed methodology in project management, wherein they integrate components from other techniques to align with a given project's specific requirements and attributes.

Each methodology has distinct advantages and limitations, making it ideal for varying project scenarios. The selection of a method is contingent upon the intricacy of the undertaking, the attributes of the team, and the operational context of the institution.

2.4 The Project Management Body of Knowledge (PMBOK)

The Project Management Body of Knowledge 00, (PMBOK) is a comprehensive framework that delineates optimal methodologies and principles in project management. The Project Management Body of Knowledge (PMBOK) is a publication created by the Project Management Institute (PMI) that has gained widespread recognition as a primary reference for project practitioners globally. The presented framework serves as a comprehensive repository of project management knowledge, encompassing a range of procedures, tools, and strategies that may be effectively employed across various project contexts. The Project Management Body of Knowledge (PMBOK) comprises five distinct process groups: Initiation, Planning, Implementation, Monitoring and Control, and Closing. Every process group consists of a set of interconnected procedures that are responsible for effectively and efficiently managing projects from initiation to completion. Furthermore, the Project Management Body of Knowledge (PMBOK) has delineated ten distinct knowledge categories encompassing integration, scope, time, cost, quality, human resources, communication, risk, procurement, and stakeholders. Each knowledge domain plays a pivotal role in effectively managing various facets of the project.

One notable strength of the Project Management Body of Knowledge (PMBOK) is providing comprehensive information on identifying risks, effective change management, and efficient resource management. This paradigm also considers diverse project stakeholders' interests, encompassing the customer, the project team, suppliers, and the broader community. Through the integration of many components, the Project Management Body of Knowledge (PMBOK) facilitates the establishment of a resilient framework for project management, thereby mitigating the likelihood of project failure and enhancing the probability of achieving desired outcomes. The Project Management Body of Knowledge (PMBOK) undergoes ongoing development to align with current trends and advancements in project management methodologies. The most recent iterations of this framework consistently embody the most up-to-date perspectives on project management, integrating the latest scholarly research and practical expertise. The PMBOK offers pertinent and essential recommendations for professionals seeking to strengthen their project management skills successfully. The Project Management Body of Knowledge (PMBOK) is an all-encompassing manual offering a systematic framework and valuable direction in project management. Project experts can achieve project success by effectively utilizing resources, mitigating risks, and ensuring the quality of the final project output through a comprehensive grasp and application of the underlying principles.

3. Result and Discussion

3.1 Results

Enterprise Architecture is an application system designed to control corporate activities within the context of project management. It possesses several key features that promote efficiency, transparency, and improved governance. Here are some of the most essential elements that the program may include:

This application must include an incorporated project management module. This functionality enables users to create, administer, and monitor global projects. Users can establish project schedules, assign resources, identify dependencies, and monitor real-time progress. This feature lets users monitor project development and company activities in real-time. The availability of up-to-date information regarding project status, milestone achievement, and task progress enables project managers and teams to make quicker, more informed decisions.

Resource Management: This application should allow users to administer company resources effectively. This characteristic encompasses allocating labor, funds, apparatus, and materials. This assists in optimizing resource utilization, avoiding allocation conflicts, and preventing cost overruns. This feature enables users to identify, quantify, and manage risks associated with company projects and activities. Users can devise risk mitigation strategies and implement suitable countermeasures.

Collaboration and Communication: This application must facilitate efficient teamwork. These features include online discussions, the sharing of documents, and the tracking of communications about company initiatives and activities. This feature enables users to manage project documents, such as project plans, progress reports, contracts, and other essential documents. Good document management prevents confusion and facilitates access to pertinent data.

Performance Metrics and Indicators: This application can provide performance metrics and indicators for measuring the success of initiatives and business activities. This enables an objective assessment of the degree to which objectives have been met.

Change Management: This application must provide practical support for change management. This feature enables the tracking of changes in project scope, the management of change requests, and the comprehension of their influence on company activities and projects. Combining these features within the Enterprise Architecture application system will assist businesses in managing their tasks and activities more effectively, reduce risk, and increase their adaptability to changes in the business environment.
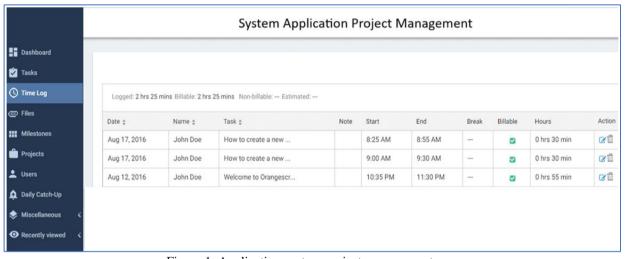

Figure 1. Application system project management
Source: Modification Orange Scrum https://www.orangescrum.com/

Figure 1, Application systems for project management are software solutions created to facilitate and simplify the project planning, execution, monitoring, and control processes. This type of system functions as a command center where project managers, team members, stakeholders, and other interested parties can collaborate, monitor progress, allocate resources, and make informed decisions throughout the project's life cycle. The primary objective of a project management application system is to increase project efficiency, guarantee effective communication, and ultimately achieve project success.

WORK BREAKDOWN STRUCTURE

Project Name

Poject Owner:	Mr. Ahmad Bill
Address:	Washington, US
Email:	bill@abc.com
Phone:	+1 202 968 071

Project Start Date

Client:	XYZ Corp.
Address:	Jakarta, Indonesia
Email:	well@xyz.co.id
Phone:	+62 21 12345678

Level	WBS	Description	Assigned To	Start Date	End Date
1	1	Stage 1	Sr.Manager		
2	1,1	Architecture Vision	Manager	11/09/2022	15/09/2022
2	1,2	Business Architecture	Manager	11/09/2022	15/09/2022
3	1.2.1	Documentation	Asst.Manager	13/09/2022	17/09/2022
4	1.2.1.1	Business Analysis	Analyst	14/09/2022	20/09/2022
4	1.2.1.2	Business Process	Analyst	14/09/2022	20/09/2022
1	2	Stage 2	Project Engineer		
2	2,1	Application Architecture	Senior Engineer	17/09/2022	23/09/2022
3	2.1.1	Technology Architecture	Senior Engineer	17/09/2022	23/09/2022
3	2.1.2	Information System Architecture	Senior Engineer	17/09/2022	23/09/2022
4	2.1.2.1	Documentation	Business Analyst	17/09/2022	23/09/2022
1	3	Stage 3	VP		
2	3,1	Coding System Apllication	Developer	20/09/2022	20/10/2022
3	3.1.1	Backend Developt	Developer	20/09/2022	20/10/2022
2	3,2	Testing	Developer	21/10/2022	30/10/2022

Figure 2. Work Breakdown Structure (WBS)
Source: Researcher Property

Figure 2. The notion of Work Breakdown Structure (WBS) is employed in project management to facilitate the division of massive projects into smaller, more manageable components. In the Indonesian context, the acronym WBS denotes the "Job Splitting Structure." The primary objective is to break down the project into constituent elements that are more manageable, quantifiable, and trackable. The Work Breakdown Structure (WBS) is employed within project management systems to arrange a project's various jobs and sub-tasks into a meticulously ordered hierarchy. The Work Breakdown Structure (WBS) typically exhibits a hierarchical arrangement wherein each task possesses a diminished level of continuity, hence contributing to the formation of a progressively intricate tree-like structure. This approach facilitates the decomposition of the project's intricacy into smaller, more feasible components.

3.2 Discussion

How can applying Enterprise Architecture principles boost the effectiveness and precision of risk management within the context of project management? (First Research Question). The utilization of Enterprise Architecture principles can yield substantial advantages in enhancing the efficiency and suitability of risk management within the context of project management. There are several manners in which the application of Enterprise Architecture principles can contribute to this context. Enterprise Architecture (EA) facilitates a comprehensive comprehension of the system environment by elucidating the interconnections among various components within an organizational framework. Through a complete understanding of the intricate dynamics and interconnections within the project framework, the project manager can discern potential hazards that may emerge due to these interdependencies.

Enterprise Architecture Principles play a crucial role in facilitating a more comprehensive identification and categorization of various sorts of hazards that have the potential to impact a project. By thoroughly analyzing how these risks are interconnected with technological infrastructure, system design, and business processes, the project management team may proactively anticipate hazards more completely. Enterprise Architecture (EA) plays a crucial role in enhancing decision-making processes by providing a comprehensive understanding of the strategic objectives of a business. By thoroughly comprehending how the project contributes to these objectives, the project manager can enhance their decision-making process by aligning it with the organization's long-term vision. Consequently, this aids in the more efficient management of risk.

Enterprise Architecture facilitates enhanced integration and synchronization among diverse systems, processes, and

teams. Adopting this approach can mitigate potential risks arising from inconsistencies or incongruities among these components. Improved coordination also facilitates effectively managing hazards due to uncoordinated developments. Enterprise Architecture (EA) promotes a systematic and strategic approach to change management, enhancing its effectiveness. By adopting a systematic perspective on the current elements, the project manager can proactively assess the potential effects of certain modifications on the project. This practice aids in the mitigation of dangers linked to alterations in the environment. Enterprise Architecture facilitates the efficient deployment of current resources, encompassing human, technological, and financial assets. Project managers can mitigate the risks associated with inefficiency and waste by implementing strategies that minimize needless fragmentation and overlap in resource utilization. The utilization of Enterprise Architecture principles not only enhances the efficacy of project management but also contributes to mitigating uncertainty and enhancing the capacity to address emergent risks.

How will integrating Enterprise Architecture into project management affect interdepartmental collaboration and the organization's ability to make more informed decisions? (Second Research Question). Incorporating Enterprise Architecture (EA) into project management can yield substantial benefits in terms of enhancing interdepartmental collaboration and facilitating better-informed decision-making within an organization. The integration of these elements can have various implications on the factors mentioned above. Enterprise Architecture (EA) facilitates enhanced openness and collaboration by offering a structured framework that promotes a shared understanding of the interrelationships between various departments and components. This enables improved interdepartmental communication, mitigates the presence of information silos, and fosters more efficient collaboration on projects. By adopting a holistic perspective on the interdependencies between different departments, teams can effectively collaborate to mitigate the potential ramifications proactively.

Enhanced Comprehension of Decision Impact: Through a comprehensive grasp of how decisions made within a specific domain can influence the broader organizational framework, project management teams can effectively enhance the quality and knowledge base of their decision-making processes. This practice aids in mitigating biased decision-making or decisions that prioritize a single department, neglecting the potential ramifications on other departments. Enterprise Architecture facilitates the alignment of goals and strategy since it enables delineating how a project aligns with the organization's long-term objectives and strategic direction. This reduces the project management team and the relevant departments' understanding of how the project's contribution aligns with the overarching vision. Consequently, the alignment of interdepartmental collaboration becomes more feasible since it can be steered toward the business's strategic objectives. The effective management of conflicts and misalignments can be facilitated by adopting a structured approach to understanding the interplay between different departments within the organizational architecture. This enables the project management team to readily recognize and resolve any conflicts or misalignments that may emerge. This measure can decrease the likelihood of fruitless debates or disagreements arising from divergent interpretations of objectives and priorities.

A more comprehensive comprehension of dependencies can be achieved through the utilization of Enterprise Architecture, as it aids in the identification of interdependencies among various system components. Therefore, the project management team can recognize the potential hazards linked to these dependencies and subsequently enhance their management and mitigation strategies for these risks. The utilization of Enterprise Architecture facilitates the comprehension of how technologies and solutions contribute to the infrastructure and capabilities of a business, hence aiding in the selection of more suitable options. By carefully considering these variables, the project management team may enhance their decision-making process regarding the choice of technologies and solutions that align with the organization's overall requirements.

Enterprise Architecture Integration facilitates a more systematic and coordinated allocation of resources, hence enhancing resource planning effectiveness. This practice aids in mitigating the occurrence of resource duplication across departments and improves the efficient allocation of resources, therefore positively influencing project implementation. In general, incorporating Enterprise Architecture into project management can yield a work environment characterized by enhanced openness, collaboration, and information sharing. Enterprise resource planning (ERP) systems aid firms in enhancing their decision-making processes, fostering improved coordination, and aligning their actions with their overarching vision and strategic objectives.

4. Related Work

In the study domain, the term "Related Work" pertains to a compilation of scholarly research, publications, or other forms of literature that bear significance to the subject matter under consideration. Project management enhancement is achieved by implementing enterprise architecture on project management application systems. Enhanced digital transformation supporting capabilities through enterprise architecture management: A fsQCA perspective 0. Innovative digital technologies have a significant impact on businesses and business ecosystems. Investments in Enterprise Architecture Management (EAM) are crucial for managing the transformation of complex information technology (IT) and information systems, facilitating digital transformation, and sustaining competitiveness. Nonetheless, research on the advantages of EAM still needs to be completed. This study identifies EAM as a distinctively dynamic managerial skill. This study uses

survey data and a set-theoretic approach to identify EAM configurations supporting IT technical capabilities and strategic alignment. Results indicate that EAM-induced system change is crucial for enhancing IT technical capabilities. In contrast, standard setting and migration plans to target architectures are essential for business and IT alignment in large organizations. These findings support the digital transformation of organizations and can help decision-makers direct EAM investments following digital strategies.

Construction of enterprise business management analysis framework based on big data technology 0. The concept of big data has been introduced by scientific and technological advancements, altering how enterprises are managed. This paper proposes a data-driven enterprise business administration system to increase productivity. This system assists managers in methodically planning and managing production, sales, finances, and organizational structure. Experiments indicate that the C4.5 algorithm upgrade in this system reduces the shipping company's petroleum consumption costs to 1,1050.12 yuan and improves the system's time efficiency compared to the traditional algorithm. Additionally, increased ship speed reduces expenses and increases operating profit. This study supports using algorithms based on decision trees in corporate business management.

Investment models for enterprise architecture and it architecture projects within the open innovation concept 0. The architecture and infrastructure of information technologies (IT) represent a significant cost item, particularly for businesses with complex production infrastructure and equipment that require automated and digital devices to capture and process primary data on technological and production processes. Most investment models for enterprise-wide development initiatives do not account for automation expenses, such as the design and implementation of information systems. To bridge the divide between the business and IT sectors, the Enterprise Architecture (EA) paradigm has been proposed. The study's objective is to develop investment models for initiatives involving the implementation and development of EA solutions, including IT architectures that eliminate the shortcomings of existing approaches. The research methodology is based on an analysis of published systems to investment models for projects creating and developing EA IT architectures, identifying their advantages and limitations, and a critique of IT investment assessment practices in Russian infrastructure-intensive firms. As a result, investment and appraisal models are proposed with benefits including the ability to calculate the effect of an integrated approach to the implementation of IT solutions, a more accurate calculation of an investment project's cost by factoring in the cost of the IT system, and a reduction in the investment cycle of development and implementation of architectural solutions, including physical and IT components.

Method for Constructing Machine Learning Project Canvas Based on Enterprise Architecture Modeling 0. This study introduces a Machine Learning (ML) project canvas to represent the project, allowing stakeholders to comprehend it. We propose a new method for constructing a project canvas model with the assistance of business AI alignment models, thereby enhancing the quality and efficacy of ML projects. Through an examination of ML project practices, this method's validity is strengthened.

An approach for real time management of global manufacturing enterprises based on Digital Data Stream 0. Advancements in sensor technology, the Internet of Things, computation, and analytics are transforming the management of global manufacturing companies. This paper examines the design of systems that facilitate real-time management utilizing web-architected autonomous services that process data, communicate, and respond to stimuli. The emphasis is on designing services that interact with other devices and services in real time.

Enterprise architecture framework design in IT management 0. Organizations face increasingly complex information systems as Information Technology (IT) evolves. An architectural approach and Enterprise Architecture Framework (EAF) are essential for addressing this challenge. This paper analyzes the role of architecture in developing an enterprise blueprint, focusing on optimizing system components, interfaces, processes, and business capabilities. EAF guides the application of architectural and technical descriptions in an enterprise context. This paper compares several prominent Enterprise Architecture Frameworks, highlighting their strengths and weaknesses. These findings provide insight into the design of efficient EAFs for optimizing workflow and business benefits. The concentration is on designing or adapting EAFs that maximize existing processes and align with organizational objectives. This paper emphasizes the significance of considering critical issues when preparing or adapting the Enterprise Architecture Framework to meet business objectives and optimize process efficacy.

Fleet management enterprise systems and traffic control synergies: a literature review and research agenda 0. This paper investigates the synergy between an enterprise fleet management system and a traffic control system to improve operational efficiency, safety, and environmental impact through information sharing and collaborative planning. This study identified five main topics related to this synergy through a synthesis of prior research, including transportation of dangerous goods, environment and emissions, position monitoring and navigation, and traffic management and optimization of fleet operations. These topics demonstrate the significance of social responsibility, such as reducing the risk of accidents involving the conveyance of hazardous materials and minimizing environmental impact. Despite the potential synergies between automated transportation systems and extensive enterprise fleet management, research on real-time coordination between fleet management and traffic control still needs to be done, according to the analysis. This includes road metering, route guidance, speed limit adjustments, and signal control. These findings highlight the need for additional research to optimize these synergies, concentrating on integrating traffic control coordination and actions.

All research investigates how Enterprise Architecture can enhance project management, so this study is comparable to previous studies. However, previous research has focused more on using EA in project management application

systems, whereas this study focuses on the benefits of incorporating Enterprise Architecture into project management in general. This study describes the contribution of Enterprise Architecture to holistic project management, including its impact on IT technical capabilities and strategic alignment. Even though this study discusses the function of Enterprise Architecture in the context of project management, there are interesting differences in emphasis and methodology.

5. Conclusion

The application of Enterprise Architecture in Project Management Application Systems provides essential benefits that enhance project management efficiency from a global perspective. It integrates organizational structure, business processes, and technology, ensures strategic alignment, improves decision-making, and systematically manages change. Consequently, project management becomes more effective, adaptable, and efficient. Integrating Enterprise Architecture into Project Management Applications offers substantial benefits. This innovative strategy improves project management by introducing a comprehensive comprehension of interdepartmental relationships and robust risk management practices. Informed decisions, enhanced collaboration, and optimized resource allocation result in efficient project execution. It is novel because it promotes holistic organization comprehension, optimizes resources, and facilitates informed decision-making. This method not only enables project execution but also provides novel approaches for mitigating potential risks and aligning project objectives with the overall organizational vision. This paradigm encourages more adaptable and perceptive project management processes, resulting in superior project outcomes and increased organizational resilience.

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