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Visionary: A Tool for Managing Institutional Objectives

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Abstract*– The Institutional Strategic Plan (PEI) is an essential tool for the planning and management of objectives at the state level, aimed at improving the efficiency of public institutions. In this context, the Peruvian Army faces significant challenges in managing its strategic goals, which has driven the development of specialized software to optimize this process. Visionary is a solution designed to manage physical and financial goals, while also facilitating interdepartmental communication and optimizing decision-making. The system offers multiple benefits, such as the automatic generation of reports, a chat feature with artificial intelligence functions, and an interactive dashboard that allows real-time visualization of objective progress. The proposal incorporates surveys based on the Likert scale, targeted at high-ranking officials and administrative personnel, to evaluate the software's effectiveness. Its implementation at the Scientific and Technological Institute of the Army (ICTE) has demonstrated that Visionary is a modular and scalable system. The results showed that the tool enhances resource optimization and operational execution, significantly contributing to the achievement of strategic objectives. However, areas such as logistics were identified as having a lower impact, suggesting the need for specific adjustments to boost its effectiveness across all sectors.

Keywords: Tools for Management, Management of Institutional Objectives, Monitoring Systems, Evaluation Systems, Planning.

I. Introduction

Management of organizations, particularly in contexts of institutional transformation, where the design and implementation of a Strategic Planning System is crucial to ensure the effectiveness of public policies [1]. Institutional Strategic Planning (PEI) stands as a fundamental tool for the long-term success of any organization, providing a clear roadmap and aligning the efforts of all members towards a common goal. It also allows institutions to anticipate and adapt to changes in public management, improving decision-making and optimizing resource use.

At the national level, there is currently no platform that allows for the efficient management of institutional objectives. Specifically, the Peruvian Army has relied on traditional office systems, which have limitations in terms of modernization and operability [2]. In response to this challenge, this article proposes the development of Visionary, a tool for managing institutional objectives aimed at aligning the Strategic Objectives of the Army. This effort seeks to contribute to the modernization of public management, promoting a more modern and transparent state, with a focus on improving internal management within public entities.

In this context, the evaluation and monitoring system of strategic objectives of the Peruvian Army has the general purpose of strengthening the institutional response and operational capacity, ensuring a more efficient and results-oriented administration [3]. This approach not only facilitates decision-making and real-time progress analysis but also supports the identification of gaps and areas for improvement.

This paper sets out three objectives: (i) centralize and analyze key data on the fulfillment of strategic objectives, identifying gaps and needs; (ii) optimize communication and interdepartmental collaboration through tools with artificial intelligence capabilities that allow for coordinated and efficient management of PEI goals [4]; and (iii) provide periodic reports, evaluations, and assessments to make adjustments and continuous improvements in the implementation of PEI's strategic objectives [5].

This article is organized into six sections. Section I corresponds to this introduction. Section II presents the key concepts on strategic objective management systems. Section III discusses related works on the use of technologies in strategic management. Section IV details the development of the Visionary software. Section V presents the experiments conducted and the results obtained. Finally, Section VI outlines the conclusions of the study.

II. Strategic Objectives Management Systems

A management system is a structured set of processes, practices, and tools designed to enable an organization to plan, execute, monitor, and evaluate its activities with the aim of achieving its strategic goals. This type of system facilitates coordination between different areas of the organization, optimizes resource usage, and ensures alignment of actions with institutional objectives. In the context of public management modernization, particularly in the defense sector, a management system must be dynamic, efficient, and capable of integrating emerging technologies such as Artificial Intelligence (AI) [6]. These technologies enhance the system's ability to improve decision-making and evaluation processes,

contributing to a more agile, transparent, and results-oriented public administration.

The Institutional Strategic Plan (PEI) is an important document in organizational planning, designed to establish the long-term objectives of an institution. This plan aligns the necessary actions and resources to achieve these goals, providing a clear vision of the strategic direction. The PEI defines specific goals, performance indicators, and policies that serve as a guide for decisions and activities over a defined time horizon. In public management, the PEI becomes a fundamental tool to ensure efficiency and effectiveness in implementing public policies. Its importance lies in its ability to offer a roadmap that guides the institution towards a desired future, ensuring that actions taken respond to strategic objectives and optimize available resources. This approach allows organizations to anticipate challenges in the environment, adapt to social demands, and contribute to the achievement of sustainable and impactful results.

Within the framework of the PEI, strategic objectives are clear, specific, and measurable goals that guide the actions of an institution towards fulfilling its mission and vision, ensuring that all efforts converge on a common purpose. In public management, these objectives transcend internal operations by directly linking with social impact and national or sectoral goals, ensuring that policies and resources are aligned with institutional priorities and the demands of the environment. Their effectiveness lies in the use of specific indicators to evaluate progress, which facilitates informed decisions, adaptation to changes, and sustainability of results, thus strengthening management and contributing to organizational and collective development.

According to [7], the modernization of institutional management involves the incorporation of technologies, practices, and innovative approaches that allow organizations to adapt to a dynamic environment, optimize resources, and improve transparency, effectiveness, and efficiency in decision-making. In the public sector, this process seeks to overcome the limitations of traditional systems through digitalization of processes, automation of routine tasks, and the use of advanced tools such as AI. These transformations not only improve internal operability but also strengthen the capacity of institutions to assess results, account for their actions, and focus on citizen needs.

Institutional management is a fundamental element for organizational success, especially in complex contexts such as the military, where efficiency, adaptability, and informed decision-making are essential. Therefore, it is important to utilize management tools, which are applications, methods, and techniques designed for organizations to plan, organize, direct, and control their resources efficiently and effectively. These tools play a crucial role by strengthening decision-making, improving internal communication, and optimizing processes in various areas of an institution, thereby contributing to the achievement of strategic goals. The importance of these tools lies, first and foremost, in their ability to optimize resource usage. Thanks to them, organizations can more efficiently manage available inputs, ensuring their proper use and avoiding waste, which is critical in environments with limited resources. Secondly, management tools improve decision-making by providing accurate and timely information through data analysis and report generation. This allows leaders to make well-informed decisions, reducing errors and increasing the effectiveness of implemented strategies. Finally, these tools facilitate the alignment of operational activities with the organization's strategic goals, ensuring that every action is directly aimed at contributing to the fulfillment of the institution's mission and vision, strengthening organizational cohesion, and maximizing the impact of initiatives.

An Application Programming Interface (API) is a fundamental tool in modern software development, especially in applications that require advanced capabilities like those offered by artificial intelligence. APIs facilitate integration, improve operational efficiency, and enable organizations to quickly adapt to new technologies and market demands.

Artificial Intelligence refers to the ability of machines to simulate human cognitive processes, such as learning, decision-making, pattern recognition, and problem-solving. AI can be used to analyze large volumes of data, predict trends, identify areas for improvement, and provide automated recommendations. Additionally, AI facilitates real-time decision-making and optimization of operational processes, improving efficiency in public administration [8].

Chatbots are automated communication systems that use AI to interact with users, answer frequently asked questions, and perform specific tasks. In public management, chatbots can be used to improve internal communication between departments, assist in managing inquiries related to the PEI, or even provide real-time reports on the progress of strategic objectives. These systems, being scalable and automated, enable more efficient and fluid interaction, reducing the workload on human resources for repetitive tasks.

A Modular System is a type of software architecture that divides functionalities into independent modules, which can be developed, implemented, and updated autonomously. This approach allows organizations to customize and expand their systems according to specific needs without affecting the functioning of the entire system. Likewise, a Scalable System is one that can adapt to the growth of the organization without losing efficiency. In other words, the capacity of a system to handle an increase in the number of users, data, or transactions without compromising performance. Scalability is crucial in the design of institutional management systems, like Visionary, to ensure that it can evolve alongside the growing needs and demands of the institution.

III. State of the Art

In [9], the theory of disruptive innovation is proposed, explaining how simple, accessible, and lower-cost technologies or models can break into markets dominated by

established companies. These innovations initially target underserved or lower-demand segments but, over time, improve and displace traditional solutions, transforming entire industries. In [10], connectivism is proposed as a learning theory in the digital age. This model posits that knowledge does not reside exclusively in individuals but in networks of information that interconnect people, technologies, and organizations. Learning occurs by building meaningful connections between information nodes and knowing how to access and manage the available knowledge. Innovation, in this context, arises from the ability to integrate diverse resources into a dynamic and adaptable network, fostering global collaboration and continuous updating [11]. In [12], it is argued that innovation is the essential driver for organizational and economic development. It emphasizes that organizations must anticipate change and manage information efficiently to remain competitive. Connectivity, in this view, is key to fostering effective communication, collaborative work, and knowledge transfer. Additionally, it highlights that technology should empower people, facilitate decision-making, and generate sustainable solutions [13]. In [14], an advanced system for strategic planning and threat evaluation is described. It aims to improve decision-making in multinational missions by integrating both physical and digital data analysis, along with artificial intelligence tools for an efficient, real-time response. In [15], monitoring systems are studied that allow real-time operational planning, optimizing resource management in combat zones. Manufacturers must respond quickly and intelligently to unexpected changes while meeting shorter delivery deadlines and satisfying customer demand. The SIEMENS Opcenter APS software is the leading solution in the market for demand strategic planning and advanced production scheduling [16]. It is useful for long-term strategic planning, medium-term tactical planning, and more detailed sequencing and scheduling. Furthermore, the Spanish company Globalyza is a consultancy focused on business strategy and organizational design to optimize results. They propose strategic business lines, set objectives that lead to organizational success, track and evaluate their achievement, and develop a strategic plan. On the other hand, the American company Asana has developed software for strategic planning to achieve objectives, from managing annual plans to preparing budgets. This software helps prioritize goals and accelerate company results. The UK Ministry of Defence, through its document "Operational Planning and Monitoring Systems in the UK Armed Forces" [17], presents a tool for risk assessment and resource allocation, which is fundamental for the efficient management of military operations. Also, in Chile, the Armed Forces Support System (SAF) centralizes data to improve decision-making and logistical distribution, providing a clear example of technology integration in strategic management [18]. Similarly, in the Spanish Navy, the Integrated Military Tactical and Resource Optimization System is used by the Ministry of Defence of Spain for the modernization and optimization of resources in the planning of its Armed Forces [18]. In Peru, the National Police, through its Strategic Monitoring System (PNP), applies management software to improve personnel and resource control in security operations [19]. In an academic work on the Management Systems in the Armed Forces of Peru [20], it highlights how digitalization and information systems enhance efficiency and response capability in defense operations. Finally, the Annual Monitoring and Resource Evaluation Report from the Ministry of the Interior of Peru highlights the effectiveness of monitoring systems in the management of human and material resources, emphasizing their application in public security [21]. Additionally, in [6] and [22], the benefits of technology in resource management and coordination between institutions are detailed, exploring how management systems contribute to military training by optimizing the allocation of academic and financial resources.

IV. Proposal Development

This work proposes a tool for the Strategic Planning of the Peruvian Army, called Visionary, with a focus on institutional goal management and the use of artificial intelligence. The development process was carried out in three phases, as shown in Figure 1.

Fig. 1 Phases of the proposal

A. *Planning and Diagnosis Phase*

In this stage, a detailed diagnosis of the current situation of the Peruvian Army regarding the management of strategic objectives was conducted, evaluating documentation and potential systems previously developed. The existing processes, technological systems used, and the gaps identified in resource management and goal tracking were analyzed. This phase also included the definition of the functional requirements for the new system, considering the operational needs of the various areas of the Army. In this context, the diagnosis focused on three stages. In the first stage, a review of the current tools was carried out, evaluating the traditional office systems used for tracking strategic objectives, such as spreadsheets, text documents, manuals, and periodic reports, which present limitations in terms of data integration, automation, and the ability to generate real-time reports (See Table 1). In the second stage, the operational efficiency of strategic management was analyzed. Through interviews with key personnel from the strategic management areas, issues related to the lack of synchronization and coordination between departments and the absence of a centralized platform to manage and monitor the progress of objectives were identified (See Table 2).

TABLE I
REVIEW OF CURRENT TOOLS

Element	Description
Diagnosis of previous tracking and evaluation systems	No system for tracking and evaluation.
Evaluated tools	Traditional office systems: spreadsheets, text documents, manuals, and periodic reports.
Regulations	PEI, Instructions
Identified limitations	Lack of data integration.

TABLE II
ANALYSIS OF OPERATIONAL EFFICIENCY

Question	PEI Monitoring and Evaluation Area	Institutional Transformation Area
How would you rate the coordination between your area and others?	70% (Feels there is communication, but it is sometimes slow.)	85% (Well-coordinated, but sometimes priorities differ.)
Do you consider the current tools (spreadsheets, text documents) adequate for monitoring and evaluating objectives?	60% (Works, but there are significant limitations.)	65% (Considers the tools insufficiently effective.)
How efficient do you consider the use of office systems for generating reports on progress towards objectives?	65% (Generates basic reports, but they are slow and not always accurate.)	70% (Works, but with limitations in the ability to generate updated reports.)
What difficulties does your area face in integrating data from different departments or areas?	80% (Difficulties due to lack of communication and scattered systems.)	80% (Data integration is manual and there is no unified tool.)
Do you think automating certain processes would improve your area's efficiency?	Yes, especially reports and the monitoring and evaluation of objectives.	Yes, automating data collection and report generation.

In the third stage, the strategic objectives of the PEI, established by the Ministry of Defense of Peru (MINDEF), were analyzed (See Table 3). This is a key step in aligning the new Visionary system with the institutional goals of the Peruvian Army. To ensure the system is relevant and effective, the strategic objectives were set to reflect the priorities of the Peruvian Army in the short, medium, and long term, ensuring they are aligned with the mission to strengthen operational capacity, transparency, and institutional modernization. Furthermore, the system is oriented towards continuous improvement, prioritizing resource optimization, operational efficiency, and the capacity to respond to emergency situations.

TABLE III
INSTITUTIONAL STRATEGIC OBJECTIVES

No	Strategic Objectives
	Increase the military capabilities for the employment of the Armed Forces.
2	Improve the presence of the Armed Forces in Disaster Risk Management.
3	Improve the management of the National Defense System.
4	Strengthen the educational system and institutional doctrine.
5	Develop institutional Cyber Defense.
6	Strengthen Research, Development, and Institutional Innovation.
7	Optimize institutional participation in maintaining internal order in accordance with the law.
8	Improve institutional presence in sustainable development.
9	Increase institutional support for the State's Foreign Policy.
10	Strengthen Institutional Management.

In the fourth stage, the technical and operational requirements for the Visionary system were established, considering the existing hardware and software restrictions and capabilities. However, Visionary presents minimum requirements, which allow its implementation in resource-limited environments without compromising its power or functionality (See Table 4).

TABLE IV
MINIMUM REQUIREMENTS FOR THE DEVELOPMENT OF VISIONARY

N°	Category	Requirement
Hardware		
1	Virtual Private Server (VPS) or Dedicated Server	CPU: 2 cores (minimum, preferably modern processors like Intel Xeon or AMD EPYC).
2	RAM	2 GB (minimum) or 4 GB (recommended for better stability and caching).
3	Storage	40 GB SSD (minimum) or 80 GB SSD (recommended) for faster read/write speeds.
Software		
1	Operating System	Linux: Ubuntu Server 22.04 LTS or CentOS Stream (both are popular, stable, and well-documented).
2	Web Server	Nginx: Recommended for its performance and ability to handle multiple simultaneous connections efficiently.
3	Alternative	Apache with modules like mod_rewrite for .htaccess configurations.

B. Development and Technological Integration Phase

In this phase, the Visionary system was developed using a modular approach, allowing the integration of various data analysis technologies and AI tools to improve decision-making. Key functionalities were implemented, such as real-time visualization through the design of dashboards, and the automation of reports and periodic evaluations of financial and physical goals.

B.1. Backend Development

Visionary has been developed using PHP with PDO (PHP Data Objects) to ensure secure, efficient, and flexible interaction with the MySQL database. The choice of PHP and PDO is due to their ability to provide security in query execution through the use of prepared statements, which

protect against SQL injections and allow easy transition in case it becomes necessary to switch the database engine. **Algorithm 1** shows the functionality to prevent SQL injection operations.

Algorithm 1: Prepared Query to Prevent SQL Injections

Input: username (string), password (string)

Output: Query result

Begin

1. Connect to the database using PDO
2. Define the SQL query with prepared parameters: SELECT * FROM users WHERE name = :username AND password = :password
3. Prepare the query in PDO
4. Bind the safe parameters to the query:
   Bind :username with the value of username
   Bind :password with the value of password
5. Execute the query
6. Retrieve the results
7. Close the database connection
8. Return the query result

End

B.2. Modular Design

The system is based on the Model-View-Controller (MVC) pattern, which separates business logic from the user interface, facilitating both scalability and long-term code maintenance. The Model approach houses the classes responsible for interacting with the database. Through PDO, queries are executed in a secure and efficient manner. The Controller approach manages the application's logic, coordinating the interactions between the Model and the Views, which were developed using HTML, CSS, and Bootstrap, providing a dynamic and responsive graphical user interface. This modular approach ensures that the system can grow and adapt to new needs as the strategic management of the Peruvian Army evolves.

B.3. Frontend Development

The frontend was developed using ReactJS and Bootstrap to provide an intuitive user interface, delivering a dynamic and responsive user experience. ReactJS, as a JavaScript library, allows for efficient real-time updates of the interface without the need to reload the page, enhancing user interaction. Bootstrap ensures a responsive design that adapts to various screen sizes, guaranteeing accessibility from mobile devices to desktop computers. Additionally, jQuery and Ajax were used to make asynchronous requests, enabling the interface to update data without completely reloading the page. DataTables was utilized for displaying data in an organized and efficient manner, offering features like pagination, search, and sorting in data tables.

B.4 Integration with AI Algorithms

For predictive analysis and optimization of strategic decision-making, the OpenAI API was used. These algorithms utilize machine learning techniques to analyze performance patterns in strategic objectives and predict potential deviations or areas for improvement. **Algorithm 2** shows the process of integrating OpenAI with the proposed system for generating automatic responses through the chatbot.

Algorithm 2: Connection of AI to Visionary

Input: user_query: Text entered by the user regarding institutional objectives.
Output: chatbot_response: Text generated by the OpenAI API in response to the query.

Begin

1. **Capture the user's query**
   Write "Enter your query about institutional objectives in Visionary: "
   Read user_query
2. **Prepare the prompt**
   prompt ← "Visionary - Query about institutional objectives: " + user_query
3. **Configure the API parameters**
   model ← "gpt-3.5-turbo"
   max_tokens ← 150
   temperature ← 0.7
4. **Call the OpenAI API with the configured parameters**
   api_response ← call_openai_api(model, prompt, max_tokens, temperature)
5. **Extract the response message from the API response**
   chatbot_response ← extract_message(api_response)
6. **Display the obtained response to the user**
   Write "Response from the Visionary Chatbot:"
   Write chatbot_response

End

C. Deployment and Training Phase

The deployment phase of Visionary was carried out at the institutional level. During this stage, roles and permissions were assigned to users, including administrators, managers, and responsible officers, starting hierarchically with the Planning Directorate (DIPLANE), Divisions, and Brigades. Key users were trained on how to use the system to track strategic objectives, interpret generated reports, and make data-driven decisions. The installation of Visionary took place on virtual test servers, as shown in Figure 2. It has an architecture designed to be scalable, efficient, and secure, which is one of the critical early stages of the implementation process due to the structure of its database and source code development, making it modular. This phase ensures that the system is correctly configured and functions according to the established requirements before its production deployment.

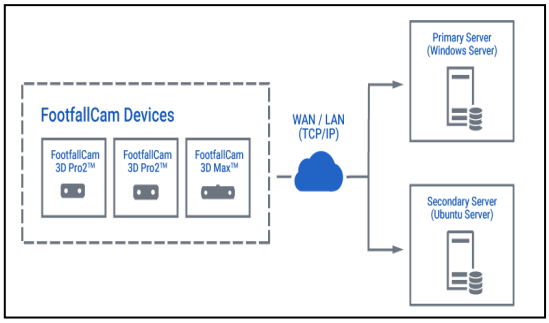

Fig. 2 Virtual server architecture

Dedicated servers were assigned to host the system in a controlled manner, allowing thorough testing without compromising the operational systems. The servers were configured with the latest versions of PHP, MySQL, and the necessary libraries to ensure optimal performance. Integration tests were carried out to verify that all system functionalities, such as the backend, frontend, and communication with the database, operated correctly. During this process, potential configuration or compatibility issues were identified and fixed. Security measures, such as password encryption and server-side data validation, were implemented to protect sensitive information during testing. Next, roles and permissions were assigned based on the user type. One of the key features of the Visionary system is the efficient management of users and their permissions. Different user roles were established:

- Administrator - DIPLANE: Full access to the system, with permissions to manage users, configure the system, and review all reports and results generated. The administrator is responsible for general supervision and management of roles and permissions.
- Manager - Army Divisions: Access to manage and track strategic objectives. They can update the progress of objectives, generate reports, and collaborate in decision-making. However, they do not have access to system configurations or user management.
- Responsible Officer - Army Brigades: Limited access to view assigned strategic objectives and their respective reports. Their primary role is to monitor results and ensure that tasks under their responsibility align with the objectives of the Strategic Institutional Plan (PEI).

Subsequently, training was conducted for users on the system's functionality to ensure they could use it effectively. A structured training program was carried out, covering the main features of Visionary, with a particular focus on navigating dashboards, managing objectives, and interpreting reports generated with AI. The training was divided into the following phases: (i) Introduction to the System: A general overview of Visionary was provided, highlighting its purpose, features, and benefits for improving strategic management in the Peruvian Army. (ii) Navigating Dashboards: Users were trained to use interactive dashboards to monitor the progress of strategic objectives, utilizing tools like DataTables. Figure 3 shows the Visionary dashboard. Additionally, training was provided on Objective Management, tracking goals, and assigning tasks and events within the system, ensuring that users could effectively manage key performance indicators and other items of interest.

On the other hand, training was provided in the analysis, use, and understanding of reports generated by the AI algorithms (See Figure 4). This process includes predictive analysis on the progress of objectives and suggestions for optimizing strategic decision-making. It was explained how to interpret the results and how these suggestions can support informed decision-making.

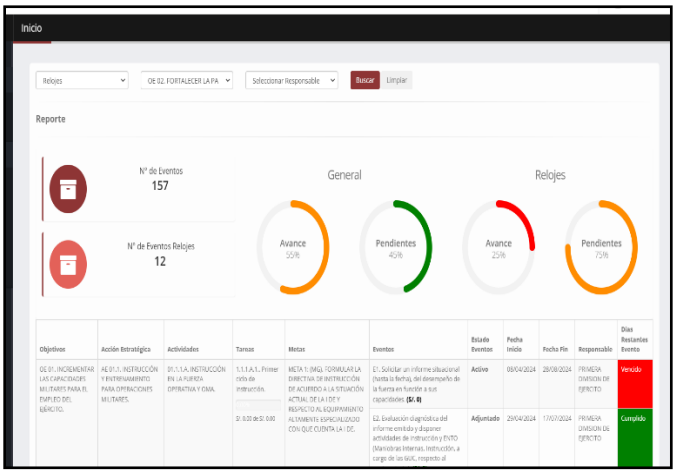

Fig. 3 Visionary Dashboard

Fig. 4 Report and AI Chatbots

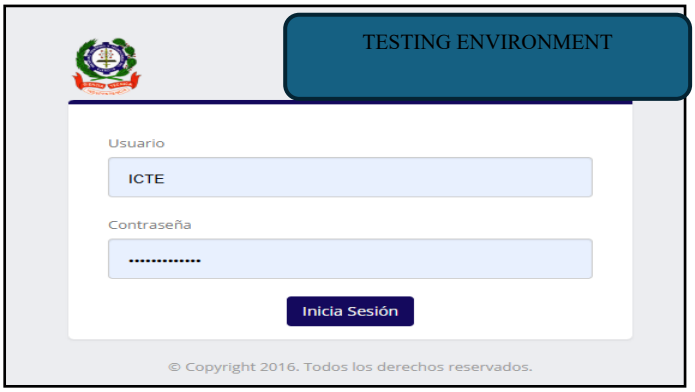

Fig. 5 Testing Environment

Finally, to ensure that users became fully familiar with Visionary and could quickly adapt to its use in real-world situations, operational scenario simulations were carried out (See Figure 5). These simulations allowed users to interact with the system in a controlled environment, without risks to the organization's real data. Various scenarios were designed to cover common and critical situations in the management of strategic objectives, such as real-time performance evaluation

and the modification of objectives based on changes in policies or available resources. During the simulations, immediate feedback was provided to users on how to use the system, correcting errors and ensuring that they understood how to handle key functionalities, such as filters for the dashboard, the use of tables, and report generation. After the simulations, a performance evaluation was conducted to identify areas for improvement in training and ensure that users were fully prepared to use the system in a real operational environment.

V. Results and Discussion

A. Results

For the perception diagnosis of the Strategic Objectives in the academic area, a sample of 12 people from the Scientific and Technological Institute of the Army (ICTE) was selected to analyze perceptions of system use in areas related to the achievement of Strategic Objectives. Table 5 shows the distribution of positions and work areas of the participants, highlighting that the majority of staff are assigned to the academic area.

TABLE V
DISTRIBUTION OF POSITIONS AND WORK AREAS

Position	Administration	Academic	Financial	Total
Assistant	0	2	0	**2**
Executor	1	2	0	**3**
Responsible	2	1	1	**4**
Director or Equivalent	1	2	0	**3**
Total	**4**	**7**	**1**	**12**

Regarding the use of technologies to manage academic objectives processes at ICTE, the results reveal the use of optional platforms, ranging from basic internal digital tools to commercial software systems and the Academic Management System (SGA) along with a virtual campus. However, there is a portion of the staff that reports not using any specific technology for this purpose (See Figure 6).

TABLE VI
USE OF TECHNOLOGIES TO MANAGE ACADEMIC OBJECTIVES PROCESSES. CROSS-TABLE: POSITION * "WHAT TOOLS OR SOFTWARE ARE CURRENTLY USED FOR ACADEMIC MANAGEMENT AT ICTE?"

Position	SGA and Virtual Campus	Internal Digital Tool	None	Commercial Software	Total
Assistant	1	1	0	0	**2**
Executor	0	2	1	0	**3**
Responsible	0	3	0	1	**4**
Director or Equivalent	0	3	0	0	**3**
Total	**1**	**9**	**1**	**1**	**12**

A.1 Evaluation of Visionary

This section presents the findings derived from the survey applied as part of the final evaluation of the Visionary system, which focuses on assessing the pilot software designed for monitoring and evaluating strategic objectives in the Peruvian Army. The survey, consisting of 10 questions using a Likert scale with values from 1 to 5 [23], [24], was answered by a representative sample of officers and administrative personnel involved in strategic planning and management. The questions were formulated to assess the perception of the software's effectiveness, applicability, and potential impact in key areas such as responsiveness to threats, infrastructure modernization, execution of risk and disaster objectives, resource optimization, and institutional cohesion.

The results described aim to identify the level of acceptance and the aspects where the software can contribute to achieving the strategic objectives established in the Institutional Strategic Plan (PEI). Additionally, the findings highlight areas of improvement in the software's functionality and assess its alignment with institutional goals of modernization and operational efficiency. This information is crucial for establishing the added value of the software as a management tool and measuring its impact on the optimization of strategic processes. For brevity, only the outstanding data from post-pilot measurements are reported.

In Figure 6, the data reflect that perceptions of the software's ability to enable more efficient resource management vary according to the respondents' areas of work. The highest score (5) is predominant in "Military Training and Education" and "Military Operations," indicating a positive evaluation in these areas. However, in "Logistics" and "Other," the responses are more dispersed, suggesting a lack of uniformity in the perception of effectiveness. The general distribution shows a moderate-to-positive trend, with the highest number of responses in scores 3 and 5, implying that while the software is positively valued in some areas, there are diverse perceptions that suggest possible areas for improvement in its implementation.

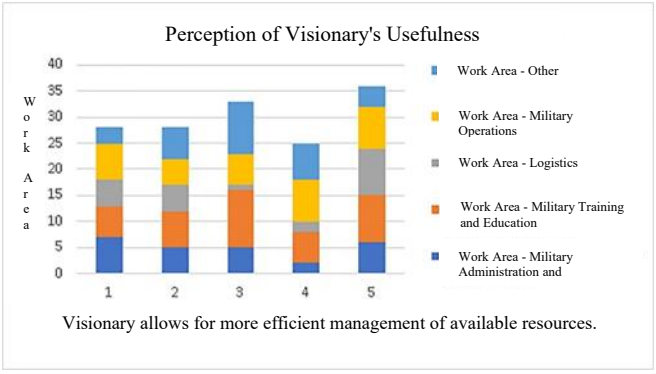

Fig. 6 Perception of the software's capability

Analysis of Table 7 and Figure 7 shows that the perception of the software's ability to enhance communication

and collaboration between different areas and units, such as "Training and Military Education" and "Military Operations," exhibits a high concentration of responses in the intermediate values of 3 and 4, indicating a moderate perception of effectiveness in these areas. In "Military Administration and Management" and "Military Logistics," the scores are also relatively evenly distributed, without a clear trend toward higher satisfaction levels (5). In the work area classified as "Other," responses are predominantly in the lower and middle levels (1, 2, and 3), suggesting that in diverse functions, the perception of improvement in communication and collaboration is lower. These results indicate that, while the software has some positive impact on communication, there are opportunities to optimize its effectiveness in this dimension. infrastructure projects, such as fiber optic laying, represent a significant advancement

TABLE VII
THE SOFTWARE IMPROVES COMMUNICATION AND COLLABORATION BETWEEN DIFFERENT AREAS AND UNITS.

Work Area	1	2	3	4	5	Total
Military Administration and Management	1	1	0	0	2	**25**
Military Training and Education	0	2	1	0	3	**39**
Military Logistics	0	3	0	1	4	**22**
Military Operations	0	3	0	0	3	**34**
Other	**1**	**9**	**1**	**1**	**12**	**30**

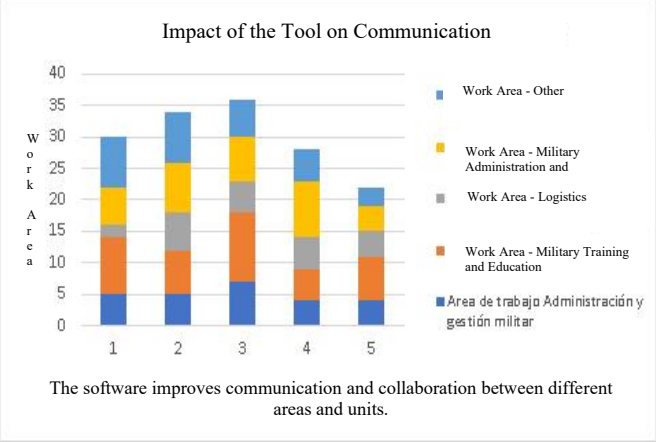

Fig. 7 Evaluation as a Communication Tool

The perception of the system's ability to facilitate strategic decision-making varies across different work areas. In "Military Administration and Management" and "Military Training and Education," the responses are distributed fairly evenly across all levels, although there is a slight inclination toward higher scores (4 and 5), indicating a moderately positive perception of the system's assistance in strategic decisions. In "Logistics," however, lower scores (1 and 2) dominate, suggesting a lower perception of the system's usefulness in this aspect. On the other hand, "Military Operations Planning" shows a tendency toward higher ratings, reflecting a favorable opinion regarding the system's support for decision-making. Finally, the area classified as "Other" has a notable spread, but with a predominance of lower and middle scores, indicating that in these diverse functions, the system is not perceived as a significant facilitator of strategic decisions (See Table 8 and Figure 8).

TABLE VIII
IMPACT OF VISIONARY AS A STRATEGIC TOOL. DOES THE SYSTEM FACILITATE STRATEGIC DECISION-MAKING?

Work Area	1	2	3	4	5	Total
Military Administration and Management	5	3	3	9	5	**25**
Military Training and Education	4	9	10	9	7	**39**
Military Logistics	7	6	1	4	4	**22**
Military Operations	5	4	8	10	7	**34**
Other	**7**	**9**	**6**	**6**	**2**	**30**

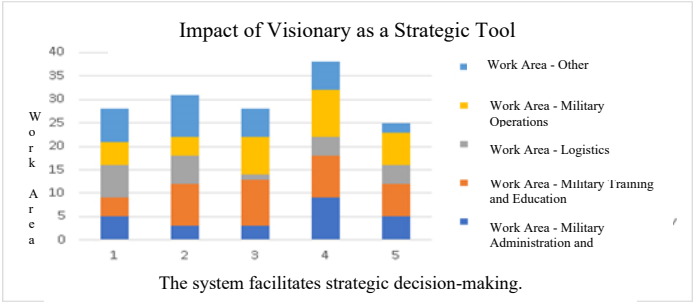

Fig. 8 Evaluation as a Strategic Tool

Finally, the perception of the respondents was evaluated regarding whether the Visionary Planning System contributes to the modernization of technological and operational infrastructure, breaking down the responses by work area. Table 9 shows that Military Training and Education is the area with the highest number of total responses (39). It has the highest number of respondents who selected 1 (11 responses), indicating a more negative perception compared to other areas. However, it also presents intermediate responses, mainly in option 4 (9 responses). Those working in Logistics have the most dispersed opinions, with a moderate concentration in option 4 (8 responses). Those in Military Operations, with 34 responses, show a split perception, though option 2 (9 responses) stands out, indicating doubts about Visionary's contribution. Finally, "Other" represents a diverse group (30 total responses). Most of the responses are in 4 (9 responses) and 5 (8 responses), reflecting a generally positive perception regarding modernization. There are significant differences depending on the work area, with notable dispersion of responses in the areas of military training and education and military operations, showing a somewhat more negative perception compared to other areas.

TABLE IX
VISIONARY AS INNOVATION. DOES VISIONARY CONTRIBUTE TO THE MODERNIZATION OF TECHNOLOGICAL AND OPERATIONAL INFRASTRUCTURE?

Work Area	1	2	3	4	5	Total
Military Administration and Management	5	4	6	5	5	25
Military Training and Education	11	5	7	9	7	39
Military Logistics	4	5	4	8	1	22
Military Operations	6	9	7	8	4	34
Other	3	6	7	9	5	30

B. Discussion of Results

The initial analysis focused on the participants' profile and the current use of technological tools for managing academic objectives. It was found that, of the 12 respondents, the majority belong to the academic area, which reinforces the relevance of these results in that field. The diversity of positions—from assistants to managers and directors—provides a broad and multidimensional view of the current situation. Likewise, it was observed that various tools are currently used, ranging from internal institutional platforms to commercial systems, as well as the use of the Academic Management System (SGA) and the virtual campus, although there is a portion of the staff that does not use any specific technology for managing objectives. This finding highlights the need to promote a greater adoption of technological tools that facilitate and unify the management and tracking of academic objectives. The Visionary system was evaluated through a survey designed with a Likert scale from 1 to 5, aimed at analyzing the perception of its effectiveness, applicability, and potential impact on key aspects such as resource management, interdepartmental communication, strategic decision-making, and technological and operational modernization. The results reveal that, regarding the software's capacity to optimize resource management, areas such as Military Training and Education and Military Operations received high scores, indicating strong recognition of its contribution in these sectors. However, in areas such as Logistics, a greater dispersion in the ratings was observed, suggesting that there are opportunities to adjust the system's implementation and better adapt it to the specific needs of each area. With respect to improving communication and collaboration among different units, the perception varies depending on the evaluated area. Although a moderate rating was evidenced in fields such as Military Administration and Management and Military Training and Education, in other sectors like Logistics and various functions, the levels of satisfaction were lower, which shows that, while Visionary contributes to better communication, its functionalities still need to be optimized to achieve more effective and uniform integration across all departments.

The evaluation of the system's impact on strategic decision-making showed heterogeneous results. In areas such as Military Operations and, to a certain extent, Military Training and Education, users expressed a positive perception, indicating that they find the system to be a significant support for their decision-making processes. However, in sectors such as Logistics and those classified as "Others," lower scores were observed, demonstrating that the tool is not yet perceived as a significant facilitator of strategic decision-making in all operational areas. Regarding Visionary's contribution to the modernization of technological and operational infrastructure, the results were mixed and largely depended on the work area. In some sectors, such as Military Administration and Management, responses reflected a moderate impact, while in Military Training and Education, more critical opinions were observed, with a greater number of negative responses. In areas such as Logistics and Military Operations, the dispersion of responses indicates that perceptions of modernization vary considerably, underscoring the need to further analyze the existing barriers and implement specific improvements. The results of this work demonstrate that the Visionary system is perceived positively in certain critical areas, especially regarding the optimization of resource management and support for strategic decision-making in sectors such as Military Operations and Military Training and Education. However, significant challenges were identified in interdepartmental communication and in integrating the system in areas such as Logistics, where the evaluation was less favorable. The heterogeneity of the responses suggests that it is essential to make technical and training adjustments that allow the tool to be adapted to the specific needs of each area, thereby ensuring greater uniformity in its implementation and use. Furthermore, the importance of promoting continuous and targeted training programs is highlighted, as these facilitate a better understanding and use of the system's functionalities. In addition, implementing constant feedback mechanisms will allow the tool to be adjusted and updated as the operational and technological demands of the Army evolve. Ultimately, Visionary is positioned as a valuable tool for managing strategic objectives and institutional modernization, but its full impact will depend on the ability to integrate improvements that address the various needs identified during the evaluation.

VI. CONCLUSIONS

The Visionary system demonstrates a positive impact in optimizing resource management and supporting strategic decision-making, especially in areas such as Military Operations and Military Training and Education. However, variations in the perception of its effectiveness are observed, with lower ratings in sectors like Logistics and other diverse areas, indicating the need for personalized adjustments to achieve homogeneous integration. Furthermore, although the system contributes to improving interdepartmental communication, there are still challenges that require strengthening interaction mechanisms. The mixed perception regarding technological modernization underscores the importance of continuously updating the tool and implementing ongoing training programs to facilitate its

optimal use. In summary, Visionary represents a significant advance in strategic planning, provided that its functionalities are adapted to the specific needs of each sector and a culture of continuous improvement is fostered.

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