

Technological management model for the services and procedures provided in the Mayor's Offices.

Modelo de gestión tecnológica para los servicios y procedimientos que se prestan en las Oficinas de la Alcaldía.

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Technological management model for the services and procedures provided in the Mayor's Offices.

Abstract

When referring to public innovation, municipal administrations must be governed by the digital government policy established by the Ministry of Information and Communications Technologies; The application of these policies is not so easy in municipal regions with development programs with a territorial approach (PDET). This research, framed under the quantitative approach, aims to structure a technological services management model that incorporates policies and guidelines under quality standards that allow the integration of a functional and efficient structure in the value chain of information technology processes, focused on in the public policy of rationalization of procedures and services, thus ensuring alignment in business objectives with the use and implementation of IT strategies. The starting point was a diagnosis of the current state of the services and procedures presented in the municipalities of the province of Ocaña at the level of technological management, verifying the gap that exists between the entities of the national order and those of the territorial order based on the digital government index and institutional performance. Continuing with the analysis of the results obtained through the measurement instrument applied to public entities and, finally, the prioritized management objectives were identified at the intersection of alignment goals with business goals under the COBIT 2019 framework and that also structured the proposed model.

Keywords: Digital transformation, service management, rationalization of procedures, digital government.

Modelo de gestión tecnológica para los servicios y procedimientos prestados en las Oficinas del Alcalde.

Resumen

En materia de innovación pública, las administraciones municipales deben regirse por la política de gobierno digital establecida por el Ministerio de Tecnologías de la Información y las Comunicaciones. La aplicación de estas políticas no es tan sencilla en regiones municipales con programas de desarrollo territorial (PDET). Esta investigación, enmarcada en el enfoque cuantitativo, busca estructurar un modelo de gestión de servicios tecnológicos que incorpore políticas y directrices bajo estándares de calidad que permitan la integración de una estructura funcional y eficiente en la cadena de valor de los procesos de tecnología de la información, con enfoque en la política pública de racionalización de procedimientos y servicios, asegurando así la alineación de los objetivos empresariales con el uso e implementación de estrategias de TI.

Palabras clave: Transformación digital, gestión de servicios, racionalización de procedimientos, gobierno digital.

Introduction

Year after year, citizens have become an increasingly demanding public, since they require greater transparency in public administrations; That is why, through a technical entity, which supports public policy planning (DNP) through the State modernization group (GME), it leads citizen service policies and regulatory improvement as a public innovation strategy to optimize the efficiency and effectiveness of the provision of State processes and procedures.

For the purpose of monitoring and applying evaluations in the provision of services, an adequate and relevant tool for capturing information identified as the Citizen Perception Survey (EPC) is used, where 2,612 people were surveyed, reaching a percentage greater than 98%. guaranteeing representativeness and statistical power according to the calculated sample [1].

The results report analyzed through Figure 1 indicates that more than 70% of the citizens surveyed affirm that the State must improve the provision of services. This indicates that, apart from the existing challenges in particular matters such as public innovation, regulatory improvement, institutional efficiency, the provision of services and implementation of policies on cross-cutting issues must be strengthened and enhanced.

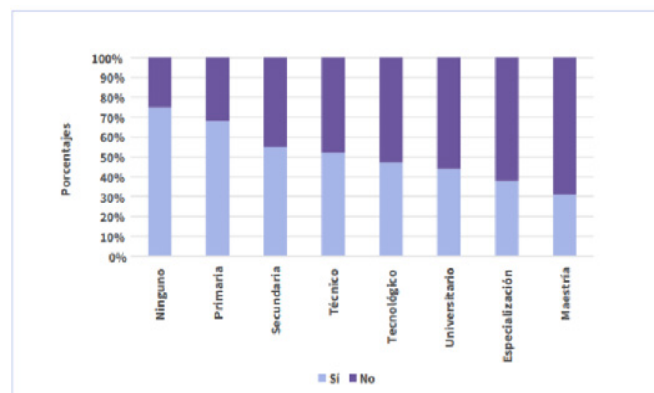


Figure 1. Response on Improving State services. Source: Obtained from [1].

Based on the previous results, the territorial entities located in the northern department of Santander are also no strangers to this bad perception issued by citizens; Such is the case of the object of the study topic of this research, the Mayor's Offices of the province of Ocaña, among which we find those belonging to the municipalities of Carmen, Convention, Ocaña and San Calixto.

These municipal administrations, speaking in terms of public innovation, must be governed by the new policy that encourages the use of ICT in the public sphere and which is commonly known as digital government policy, established by the MinTIC, an important

capacity generation strategy. that fulfills its role of providing technological standards, innovative methodologies and general guidelines that optimize the management of public structures of the State and that also allow the resolution of problems with a citizen-centered approach [2].

This policy is part of the integrated planning and management model (MIPG) and is integrated with the governance and institutional effectiveness policy.

Said institutional performance is monitored through an online tool called the single management progress report form (FURAG), and in the case of the selected entities, the digital government index is evaluated based on the level of implementation of the guidelines. and digital government policy guidelines [3].

The methodology used to calculate the institutional performance index is carried out from the data collected in the associated FURAG responses, and then a graded response model is applied. The formula used is the following:

$$P_{xj}(\theta_i) = \frac{1}{1+e^{-a_j(\theta_i-\delta_j)}}(1)$$

Where,

- θ_i : represents the performance of the entity i
- x : represents the number of categories k of the item jj
- a : is the discrimination parameter of the item jj
- δ : is the parameter that defines the difficulty of the item jj

The analysis carried out on the data obtained in the institutional performance index in the selected Mayor's Offices can be seen in the representation of Figure 2.

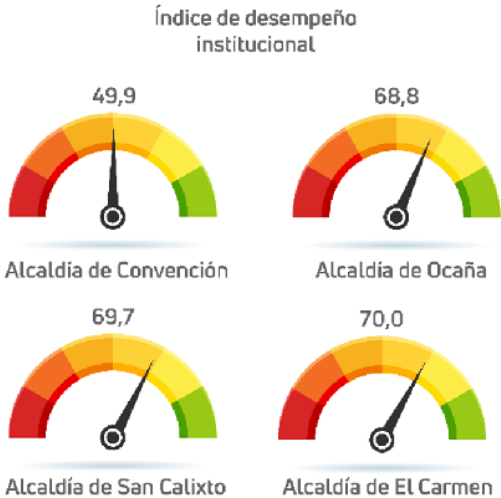


Figure 2. Institutional performance index of the selected entities. Own elaboration based on [3].

Now through Figure 3, you can see the result obtained from the entities selected in the research and in this way know the performance of each of the public entities in terms of digital government.

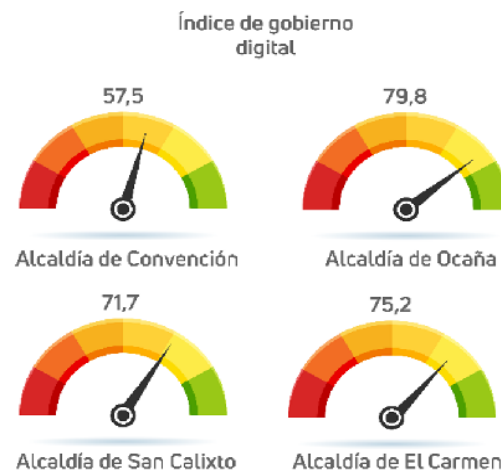


Figure 3. Digital government index of the selected entities. Own elaboration based on [3].

According to the results mentioned above, although the State has done a great job based on the implementation of innovation guidelines and methodologies, the entities still maintain notable differences that in turn maintain the bad perception of the state's public entities. , with which the need arises to advance the maturity levels of the entities based on the provision of their services through a technological service management model focused on activities to rationalize procedures and in this way strengthen the citizen relationship. – State, ensuring a positive impact on the quality of life of the communities in the territory.

Methodology

The type of research that guides this project is framed in research under the descriptive method, as pointed out by [4], in his thesis, descriptive research refers to cataloging the identifiable characteristics of multiple components and their interrelationships. Its purpose is based on delimiting the conditions that make up the problem situation using methods such as direct observation, data collection and methods such as questionnaires, together with documents prepared by other researchers; These are mainly used for sampling seeking to collect data and information obtained through coding, tabulation and statistical analysis.

The research paradigm is quantitative in nature, based on the assumption that it is possible that all data can be quantified [5]. To do this, it is based on the foundations of positivism and nomothetic science (the establishment of general laws), which tend to focus the analysis on the external manifestations of reality [6].

For the development of the research, we began by diagnosing the current state of the

services and procedures presented in the municipalities of the province of Ocaña at the level of technological management, applying international standards to identify the shortcomings presented. For this, the services and procedures of each mayor's office were characterized, in such a way that a tool was then developed to collect information through a questionnaire and its application, and finally the results obtained were analyzed. Subsequently, a technological management model was structured for the mayors of the province of Ocaña, incorporating the necessary elements to improve the quality in the management of the services offered therein. In it, the elements of the model and its subsequent design were identified.

Results and discussion

Diagnosis of the current state of the services and procedures presented in the municipalities of the province of Ocaña

To diagnose the current state of the mayor's services, we must be clear that these must be filed and registered on the single procedure information system platform (SUIT), which is a repository and the only valid source of information on the services that The public institutions of the state offer to society.

Based on this, it was decided to analyze in the SUIT portal [7], the progress of each municipality based on the progress in the registration of procedures, yielding the following results:



Figure 4. Progress of registration of procedures of the selected mayors. Own elaboration based on [7].

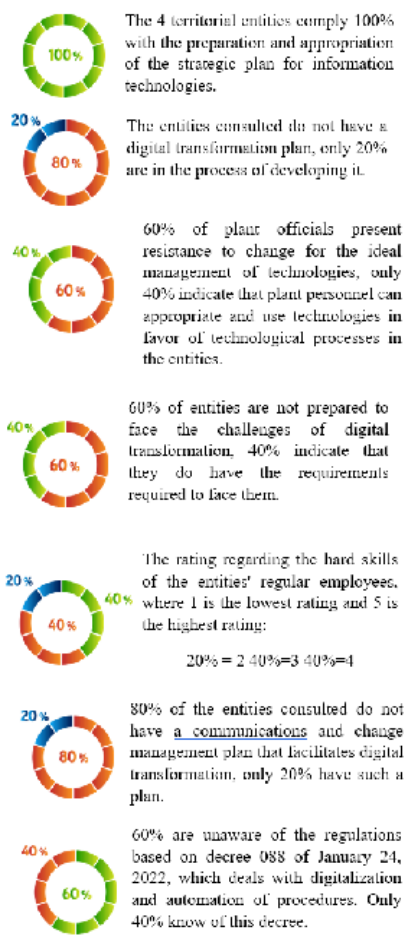
Figure 4 shows in detail how the registration process of the inventory of procedures of each territorial entity is located, where the municipality of El Carmen has completed all its procedures with 100% progress, unlike the municipality of Convention, which has

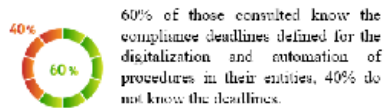
a progress of 85%, the municipality of Ocaña with a progress of 70% and finally the municipality of San Calixto with a progress of 50%.

These results indicate that each municipal administration has done its job and it is expected that the other municipalities will soon comply with 100% progress in the registration of all their procedures.

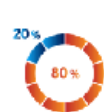
Application of the measuring instrument to know the current state of the Mayor's Offices of the province of Ocaña.

The measurement instrument was designed with 20 questions to identify the current situation regarding the rationalization of procedures and services, linked activities and processes of digital transformation and the information technologies of the entity, which will allow a diagnosis to be made based on the results obtained by this tool. Using the defined survey, which was applied to project bank office (PMO) leaders or planning secretaries, digital government leaders or ICT liaisons of the territorial entities of the province of Ocaña, the form was sent to 6 professionals, of which 5 completed the survey and the results are as follows.





60% of those consulted know the compliance deadlines defined for the digitalization and automation of procedures in their entities, 40% do not know the deadlines.



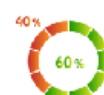
80% of the entities consulted do not have a defined schedule to comply with the deadlines for digitization and automation of procedures. Only 20% have a defined schedule.



100% of the entities consulted know the number of procedures that are registered in the inventory of the unique information system for procedures and services of the Colombian public administration.



80% of the officials consulted know the procedures that are provided entirely online in their respective entities, only 20% do not know the exact amount.



60% of the entities consulted have implemented procedures rationalization policies (simplification, standardization, elimination, optimization and automation). Only 40% indicate that



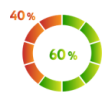
60% of the officials consulted indicate that the benefits of implementing processes for streamlining procedures are associated with improving the quality of services. The next 20% is reflected in a reduction in requirements to carry out the procedures and the remaining 20% is associated with a reduction in paperwork.



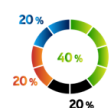
100% of the officials consulted know the dates corresponding to the terms for resolving the different types of requests.



80% of the entities consulted indicate that they comply with the established deadlines, only 20% indicate that they do not comply with said dates.



60% of the entities consulted have digital tools that allow monitoring, control and quality evaluation focused on the provision of services and procedures, 40% indicate that they do not have this type of technological tools.



Ratings focused on the quality of the provision of services and procedures of each of the entities consulted. The results are the following:

High=40% Medium=20%

Low=20% Very low=20%



80% of the officials consulted implement methodologies, standards and work frameworks when carrying out processes of rationalization of procedures and services. Only 20% do not implement this type of tools.

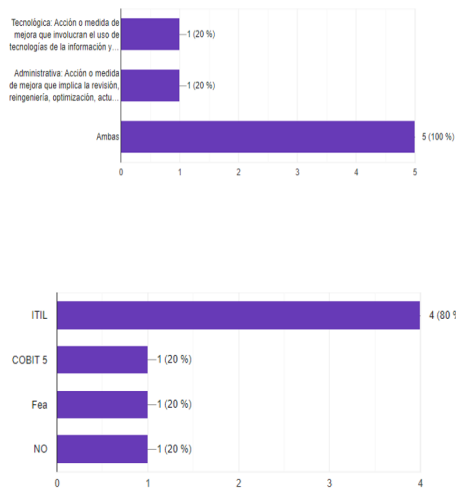


Figure 5. Results of the application of the measuring instrument. Source: Own elaboration.

14.28% of those consulted indicate that the ideal improvement to provide better services and procedures focuses on technologies, the next 14.28% associate it with administrative improvements and 71.42% associate it with the fact that they apply to both processes, both technological and administrative.

57.1% of the officials consulted know the ITIL standard, 14.28% know COBIT, 14.28% know FEA, and the remaining 14.28 do not know these standards.

Analysis and interpretation of results.

The analysis allows determining the validity of the project results as a contribution to the changes that must be taken into account to meet the objectives of the territorial entities. Based on the first question, it can be seen that the Mayor's Offices of the province of Ocaña have responsibly carried out the strategic plan for information and communications technologies (PETI), which will allow the services and procedures to be effectively managed through strategies focused on technologies. of the information.

In the second question, we can see that we do not have the same luck based on the digital transformation plan, since no entity has said artifact and only one is in the development process, which is why it is recommended to promote this type of strategies. so that local authorities can capitalize on digital innovation and use new technologies by reinventing or modifying processes, products or services to deliver value in the public sphere.

In the third question, it can be concluded that more than half of the entities consulted are not prepared both culturally and technologically to face the challenges of digital transformation. Respondents agree that these shortcomings are associated with two general problems, the lack of specialized professional human capital that allows a better transition of innovative strategies and the low allocation of budgetary resources that make it possible to make up for deficiencies in software and equipment.

In the fourth question, related to the gaps that currently exist in public entities, it is concluded that plant personnel are one of the causes that present resistance to change, which causes a functional conflict in internal processes. They associate this problem with a lack of interest on the part of officials, since they are in the process of retirement; They also associate it with a lack of training and staff turnover. That is why it is suggested to implement optimal and efficient training plans that encourage officials and guarantee good adoption of technological strategies.

In the fifth question related to hard skills, the results are associated with the previous question, where respondents mention in high percentages a low qualification for officials, since the skills they present generate conflicts in the entity, which does not allow strengthening competencies and thus resist organizational changes that imply strategies focused on information technologies.

In the sixth question, it can be concluded that the entities do not have an effective communication and change management plan, which hinders the effective execution of the different strategies that are intended to be implemented. That is why it is suggested to have this type of artifacts that allow effective alignment between processes and organizational culture. It is worth clarifying that the changes are not only led by the management, but also involve the entire organization. In this way, a clear vision of the entity's needs is obtained and thus guarantee the continuity of the commercial operations of the business.

In the seventh question, it can be concluded that not all organizations are aware of decree 088 of January 24, 2022, which suggests training those in charge of it, since they must be clear about the regulations related to digital processes and automation. of procedures. At the same time, it could be seen in the officials that they responded positively upon learning of the decree and their responses vary, but are focused on the ideals of the decree itself.

In the eighth question, the result is similar to the previous question, where more than half of the answers state that they know the deadlines for compliance, but when told to mention the exact dates of the deadlines, they give completely different and erroneous dates, which allows Suggest training officials in these areas and being clear about the established deadlines.

In the ninth question, it is concluded that entities do not have a defined schedule or plan to adopt digital processes and service automation. The suggestion in this case applies to the previous question.

In the tenth question, it is concluded that there is ample clarity on the part of officials regarding the number of procedures that are registered in the inventory of the unique information system for procedures and services of the Colombian public administration (SUIT).

In the eleventh question, it is concluded that there is clarity on the part of the officials surveyed regarding the number of procedures that are registered in the unique information system of procedures and services of the Colombian public administration, but focused on those that are provided. totally online.

In the twelfth question, it is concluded that not all entities have implemented procedures rationalization policies (simplification, standardization, elimination, optimization and automation). On this occasion, those who answered negatively agree that these

processes have not been advanced due to the high investment cost and the adaptation time. That is why it is suggested that the senior management of the entities have a greater commitment to the digital transformation of their municipalities, this includes investment and willingness of those in charge to be able to carry out this type of strategies that are so important to guarantee better provision of services. community Services.

In the thirteenth question, we conclude that we have clarity on the benefits that can be achieved in the implementation of streamlining procedures. In the chosen ones, the improvement in service quality management is presented, which is one of the main factors of its implementation.

In the fourteenth question, it is concluded that the officials know the dates corresponding to the terms defined in the regulations under Law 1755 of June 30, 2015. It is striking in two of the five answers, in which they state deadlines that are erroneous since that do not agree with those established in said regulations, which is why a better interpretation by officials and understanding of it is suggested.

In the fifteenth question, it is concluded that the qualification of the officials regarding compliance with the established deadlines is correct.

In the sixteenth question, it is concluded that not all entities have digital tools that allow control, monitoring and evaluation based on the quality of the services offered by the mayors, which is why it is suggested to have technological tools that They guarantee an optimal quality response for each of the services offered to the community and in this way strengthen the citizen-entity relationship.

In the seventeenth question, it is concluded that the quality of the procedures provided is not high; in fact, the rating varies between medium and very low. That is why it is suggested to comply with the previous recommendations and in this way improve processes and provide efficient and quality procedures.

In the eighteenth question, it is concluded that methodologies have been implemented that support different projects that promote the organization's business architecture. Among them are the public service methodologies guide, SUIT 3.0, rationalization of procedures, MinTIC guides.

In the nineteenth question, the professionals surveyed stated that they knew more about the ITIL standard over COBIT and FEA.

In the last question, it is concluded that to guarantee better provision of mayoral procedures, different processes, both technological and administrative, must be improved; there are several points that must be analyzed guided by the digital transformation framework. It is important to mention evaluating not only processes and technologies, organizational culture and data analytics are fundamental and must work together to strengthen and

leverage the digital transformation of mayors' offices.

In general, there are different suggestions that are presented in this analysis, but said instrument must be complemented with quite important data such as the level of maturity of the entities, as mentioned [8], where through 3 fundamental axes, among which we find digital citizen services, architecture and information security, we can see the factors in which the entities under study in this research lack and can be seen in figure 6.

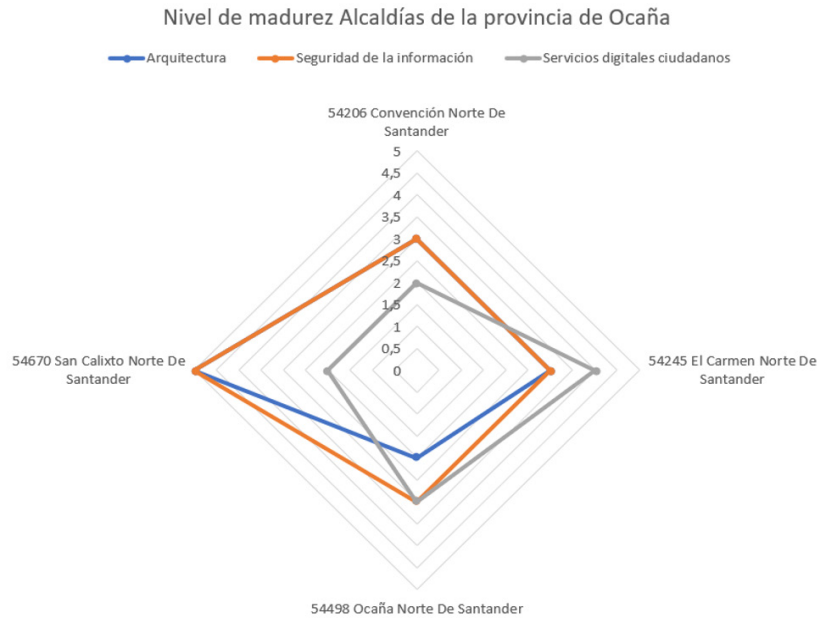


Figure 6. Maturity level of the Mayors of the province of Ocaña. Source: Obtained from [2].

Now for the development of the article, focusing on the case study of the mayor's office of Ocaña, which presents the largest entity providing information, it presents, through figure 7, the detailed qualification for each of the axes mentioned above, where diagnoses that the work of the different areas in charge must be articulated to strengthen the provision of services together with an effective digital transformation plan and in this way guarantee efficient procedures for the community in general.

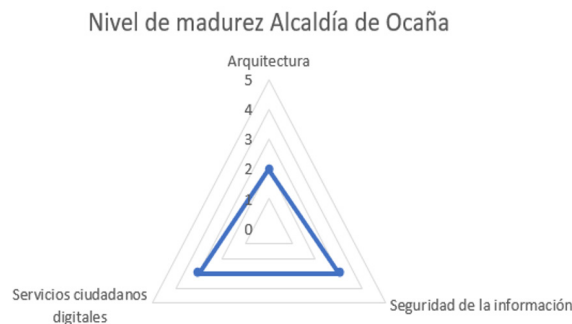


Figure 7. Maturity level of the Ocaña Mayor's Office. Source: Obtained from [2].

Validation and incorporation of standards within IT management processes based on COBIT 2019.

COBIT 2019 Standard

COBIT is an organization-focused framework for the governance and management of enterprise information technology (IT). [9]. COBIT defines different components to create and maintain a governance system based on elements such as processes, organizational structure, policies and procedures, information flow, culture and behavior, skills and infrastructure, elements called catalysts in the model. Additionally, it defines the design factors that an entity should consider when creating a governance system that fits its needs, thereby addressing governance issues by grouping related governance components into governance and management objectives that can be managed in accordance with the required level of capacity.

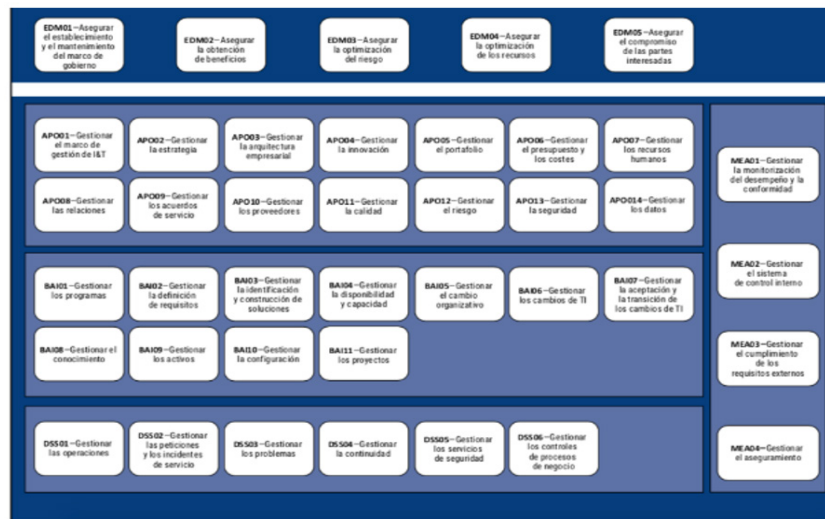


Figure 8. COBIT 2019 process framework. Source: Obtained from [10].

ITIL standard

ITIL is a best practice guide for information technology service management that proposes good practice as a tool to support and improve an organization's service management. These entities can belong to any business sector given that their focus is the monitoring and improvement of their management processes, focused on improving the quality of the services and products provided to their clients, whatever they may be [11].



Figure 9. IT service management structure. Source: Obtained from [11].

ISO 20000

The ISO 20000 standard, known as IT service quality, is a powerful tool that provides organizations with continuous information on the actual state of service delivery. It also monitors the change process and recommends improvement actions. For this reason, it is classified as a key tool to generate trust in information technologies and look to the future [9].

Design of the technological services management model for the municipalities of the province of Ocaña.

According to the prioritization reflected in figures 10 and 11, where the intersection of alignment goals with business goals can be seen, it becomes effective and necessary to work on this model under the APO08 and BAI05 management objectives and their respective management practices.

		METAS EMPRESARIALES															
		EG01	EG02	EG03	EG04	EG05	EG06	EG07	EG08	EG09	EG10	EG11	EG12	EG13	FUENTES	Por	Sobre
<p>2 PESO: Asigne un valor de 1 a los objetivos de negocio que sean de interés para su organización.</p>		1	1	1	1	1	1	1	1	1	1	1	1	1			
METAS DE ALINEAMIENTO	AG01	Cumplimiento y soporte de TI.T para el cumplimiento del negocio con leyes y regulaciones externas.													4	33	*
	AG02	Oración de riesgo relacionado con TI.T													1	6	*
	AG03	Beneficios obtenidos del portafolio de inversiones y servicios habilitados por TI.T													50	1	*
	AG04	Calidad de la información financiera relacionada con la tecnología.													9	28	*
	AG05	Prestación de servicios TI.T conforme a los requisitos del negocio.													9	50	*
	AG06	Agilidad para convertir los requisitos del negocio en soluciones operativas.													9	50	*
	AG07	Seguridad de la información, infraestructura de procesamiento y aplicaciones, y privacidad.													9	28	*
	AG08	Habilitar y dar soporte a procesos de negocio mediante la integración de aplicaciones y tecnología.													11	100	1
	AG09	Ejecución de programas dentro del plazo, sin exceder el presupuesto, y que cumplen con los requisitos y estándares de calidad.													14	78	1
	AG10	Calidad de la información sobre gestión de TI.T.													1	6	*
	AG11	Cumplimiento de TI.T con las políticas internas.													14	56	*
	AG12	Personal competente y motivado con un entendimiento de la tecnología y del negocio.													4	33	*
AG13	Conocimiento, experiencia e iniciativas para la innovación empresarial.													12	67	1	

Figure 10. Goal cascade – crossing alignment goals with business goals. Source: Obtained from COBIT and evaluated by the author.

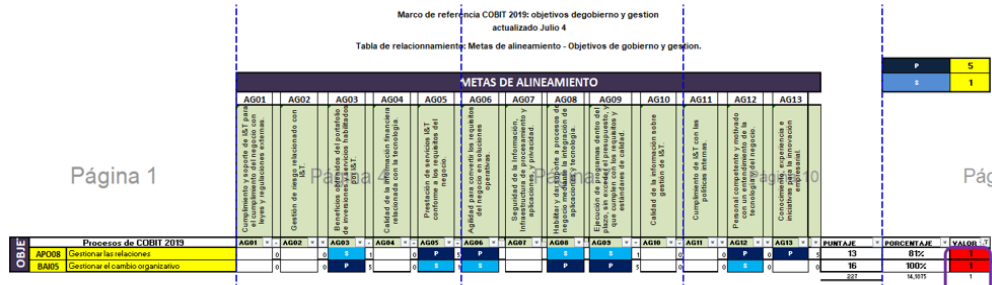


Figure 11. Cascade of goals – Relationship table: Alignment goals – Government and management objectives. Source: Obtained from COBIT and evaluated by the author.

Table I. Objectives and management practices to be evaluated.

MANAGEMENT OBJECTIVE	
ALIGN, PLAN AND ORGANIZE (APO)	BUILD, ACQUIRE AND IMPLEMENT (BAI)
APO08 Manage relationships	BAI05 Manage organizational change
MANAGEMENT PRACTICE	
APO08.01 Understand business expectations.	BAI05.01 Establish the desire to change.
APO08.02: Align I&T strategy with business expectations and identify opportunities for IT to improve the business.	BAI05.02 Form an effective implementation team
APO08.03 Manage the relationship with the business.	BAI05.03 Communicate the desired vision
APO08.04 Coordinate and communicate	BAI05.04 Empower participating roles and identify short-term gains
	BAI05.05 Enable operation and use
APO08.05 Provide contributions for the continuous improvement of services	BAI05.06 Incorporate new approaches
	BAI05.07 Sustain the changes.

Fountain: Own elaboration based on COBIT 2019.

That is why it was decided to evaluate these objectives focused on the reference entity, in this case it is the mayor's office of Ocaña, which represents the largest source of information in this investigation. In this case, the evaluation is directed at the activities of each of the management practices related to the aforementioned management objectives.

Table II. Evaluation of the municipal mayor's office of Ocaña focused on the activities of each of the management practices.

GOVERNMENT PRACTICE	ACTIVITY	DESIRED LEVEL	LEVEL					FULFILLS	
			1	2	3	4	5	YEAH	NO
	Identify business stakeholders, their interests and areas of responsibility.	2				x			x
	Review the company's current direction, problems, strategic objectives and their alignment with the business architecture.	2			x				x
	Understand the business environment, current process limitations or issues, geographic expansion or contraction, and industry/regulatory factors.	2			x				x

APO08 Manage relationships	Maintain an understanding of business processes and associated activities. Understand demand patterns that relate to service volumes and usage.	2				x				x
	Manage expectations by ensuring business units understand priorities, dependencies, financial constraints, and the need to schedule requests.	3				x				x
	Clarify business expectations for I&T-enabled services and solutions. Ensure that requirements are defined with business acceptance criteria and metrics.	4			x					x
	Confirm that there is agreement between IT and all departments in the company about expectations and how they will be measured. Ensure this agreement is confirmed by all interested parties.	4			x					x
	Position IT as a business partner Play a proactive role in identifying and communicating with key stakeholders about opportunities, risk and constraints. These include emerging technologies, services and current business process models.	3		x						x
	Collaborate on major new initiatives with portfolio, program and project management. Ensure involvement of the IT organization from the start of a new initiative through value-adding advice and recommendations (e.g. business case development, requirements definition, solution design) and ownership of I&T workflows .	3		x						x
	Assign a relationship manager as a single point of contact for each significant business unit. Ensure that a single counterparty is identified in the company organization and that the counterparty understands the business, is sufficiently knowledgeable about the technology and has the appropriate level of authority.	3		x						x
	Manage the relationship in a formal and transparent manner that ensures a focus on achieving a common and shared goal of successful business results, in support of strategic goals and within the constraints of budgets and risk tolerance.	3			x					x
	Define and communicate complaints and escalation procedures to resolve any relationship issues.	3			x					x
	Ensure relevant responsible stakeholders agree and approve key decisions	4			x					x
	Plan specific interactions and schedules based on agreed objectives and a common language (service and performance review meeting, review of new strategies or plans, etc.).	4			x					x
	Coordinate and communicate changes and transition activities such as change or project plans, schedules, release policies, known errors in release, and awareness training.	2			x					x
Coordinate and communicate operational activities, roles and responsibilities, including defining request types, hierarchical escalation, major disruptions (planned and unplanned), and content and frequency of service reports.	2			x					x	

Be responsible for responding to the business in the event of significant events that could influence the relationship with the business. Provide direct support, if necessary.	2			x				x
Maintain a complete communication plan that defines the content, frequency and recipients of service provision information, including the status of the value offered and any identified risks.	3		x					x
Carry out satisfaction analysis for clients and suppliers. Ensure problems are resolved; report results and status.	4			x				x
Work together to identify, communicate and implement improvement initiatives.	5			x				x
Work with service management and process owners to ensure that I&T-enabled services and service management processes are continually improved and that the root causes of all issues are identified and resolved.	5			x				x
Evaluate the scope and impact of the visualized changes, the affected stakeholders, the nature of the impact and the required participation of each interest group, in addition to the actual willingness and capacity to adopt the change.	2			x				x
To establish the desire to change, identify, leverage and communicate current pain points, negative events, risk, customer dissatisfaction and business problems, as well as initial benefits and future opportunities and rewards and competitive advantages.	2			x				x
Issue key communications from the executive committee or CEO that demonstrate commitment to change.	2			x				x
Provide visible leadership from senior management to set the course and align, motivate and inspire stakeholders to desire change.	3		x					x
Identify and assemble an effective core implementation team that includes appropriate business and IT members with the ability to dedicate the required amount of time and contribute their knowledge and expertise, experience, credibility and authority. Consider including external staff, such as consultants, to provide an independent point of view and to address skills gaps. Identify potential change agents within different parts of the business that the core team can work with to support the vision and cascade changes.	3		x					x
Build trust within the core implementation team through carefully planned events with effective communication and joint activities.	3			x				x
Develop a common vision and goals that support company objectives	3				x			x
Develop a vision communication plan to support core audience groups, their behavioral profiles and information needs, communication channels and principles.	3			x				x
Communicate at the appropriate levels of the company, according to the plan.	3			x				x
Strengthen communication through multiple forums and repetitions.	3			x				x
Hold all levels of leadership accountable to demonstrate the vision.	3				x			x

BAI05 Manage or- ganizational change	Check understanding of the desired vision and respond to any questions raised by staff.	4			x					x
	Plan the training opportunities that staff will need to develop the skills and attitudes necessary to feel empowered.	2		x						x
	Identify, prioritize and deliver quick win opportunities. These could relate to known areas of difficulty or real external factors that need to be addressed urgently.	2			x					x
	Take advantage of the quick wins offered by communicating the benefits to those affected to show that the vision is going as planned. Refine the vision, keep leaders involved and build momentum.	2			x					x
	Identify organizational structures compatible with the vision; if necessary, make changes to ensure alignment.	3			x					x
	Align HR processes H H. and the measurement systems (e.g., performance appraisal, compensation decisions, promotion decisions, recruiting and hiring) to support the vision.	3			x					x
	Identify and manage leaders who continue to resist change.	3			x					x
	Develop a plan for the operation and use of the change. The plan should communicate and build on quick wins, comprehensively address cultural and behavioral aspects of the transition, and increase engagement and participation. Ensure that the plan covers a holistic view of the change and that it provides documentation (e.g. procedures), advice, training, mentoring, knowledge transfer, support for the continuous improvement immediately after its implementation.	3		x						x
	Implement the operational and use plan. Define and track measures of success, including business-hard measures and perception measures that indicate how people feel about a change. Implement corrective actions if necessary.	4		x						x
	Hold process owners accountable for normal daily operations.	2			x					x
	Celebrate successes and implement recognition and reward programs to reinforce change.	3		x						x
	Provide continuous awareness through regular communication of change and its adoption.	3		x						x
	Use performance measurement systems to identify root causes of low adoption. Take corrective actions	4			x					x
	Conduct compliance audits to identify root causes of low adoption. Recommend corrective actions	4		x						x
	Sustain and reinforce change through regular communication that demonstrates senior management commitment.	2		x						x
	Provide advice, training, mentoring and knowledge transfer to new staff to sustain change.	3		x						x
Carry out periodic reviews of the operation and use of the change. Identify improvements.	4			x					x	

Capture lessons learned related to the implementation of change. Share knowledge with the entire company.	5		x						x
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Fountain: Own elaboration based on COBIT 2019.

Moving forward on the topic, we continue evaluating this time in the organizational structures component to define roles and responsibilities and verify if the corresponding assignment exists in the entity under study.

Table III. Evaluation of the municipal mayor's office of Ocaña focused on the organizational structures component.

POST	FULFILLS		OBSERVATION
	YEAH	NO	
Executive General Director	X		The person who performs these functions in the entity is the mayor.municipalfrom Ocaña. Responsible for the global management of the company.
Chief Financial Officer	X		The person who performs these functions in the entity is the treasury secretary. He is accountable for all aspects of financial management, including financial risk and controls, as well as reliable and accurate accounting.
Director of operations		x	In general, there is no operations manager; this function can be assumed by the respective municipal secretaries. They are those who are accountable for the operation of the company.
IT Director	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. He is the one who is accountable for planning, resource management and provision of services and solutions.ITEM.
Technology Director	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. He is responsible for the technical aspects of I&T, including managing and supervising decisions related to I&T services, solutions and infrastructure.
Director of digital technologies	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. He is the one who implements the digital transformation of the company or business units.
I&T Governing Council		x	There is currently no governing council.ITEM.
Business process owners	X		This function can be assumed by the respective municipal secretaries, who are accountable for the execution of the processes and/or the achievement of the objectives of the processes, lead the improvement of the processes and approve changes to the processes.
Relationship manager	X		Who performs this function are the systems and planning departments. They are responsible for supervising and managing the interface and internal communications between business functions andITEM.
Head of architecture	X		This function is assumed the person in charge of the municipal development plan. She is in charge of the enterprise architecture process.
Development boss	X		The person who performs these functions in the entity is a contractor of the systems, communications and surveillance office. He is the one who is accountable for the solutions development processes.ITEM.
IT Operations Manager	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. Accountable for operating environments and IT infrastructure
Service manager	X		This function is performed by the leader of the systems, communications and surveillance office. It is the one who manages the development, implementation, evaluation and continuous maintenance of new or existing products and services, for a specific client (user) or group of clients (users).
Information security manager	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. He is the one who manages, designs, supervises and/ or evaluates the information security of a company
Business continuity manager	X		This function is assumed the person in charge of the municipal development plan. It is the one who manages, designs, supervises and/ or evaluates the business continuity capacity of a company, to guarantee that its critical functions continue to operate after disruptive events.

Privacy Director	X		The person who performs these functions in the entity is the leader of the systems, communications and surveillance office. He is responsible for overseeing the risk and impact of privacy laws on the business and for directing and coordinating the implementation of policies and activities that ensure compliance with privacy policies.
Executive committee	X		The person who performs these functions in the entity is the municipal mayor of Ocaña along with his Office Secretaries. They are those who are part of the senior executives who guarantee and decide the making of the main decisions.
Program Manager			This function is assumed by the person in charge of the municipal development plan. She is responsible for directing a specific program, including articulating and monitoring program goals and objectives and managing risk and its impact on the business.
Project manager	X		The person who performs these functions in the entity is the leader of the project bank office. He is responsible for directing a specific project, including coordinating and delegating time, budget, resources, and tasks to the project team.
Project management office	X		The person who performs these functions in the entity is the leader of the project bank office.
HR director	X		Whoever performs these functions in the entity is the leader of the public service office. He is the one who is accountable for the planning and policies related to the company's human resources.

Fountain: Own elaboration based on COBIT 2019.

Continuing with this evaluation process, we continue with the component of flows and information elements with their respective inputs and outputs, which can be seen in the following table.

Table IV: Evaluation of the municipal mayor's office of Ocaña focused on the component of information flows and elements.

PRACTICE OF GOVERNMENT	MANAGEMENT PRACTICE	TICKETS		YEAH	NO	EXIT		YEAH	NO
		OF	DESCRIPTION			DESCRIPTION	TO		
	APO 08.01 Understand business expectations	APO02.05	Strategic roadmap.	x		Business expectations explained and agreed upon.	Internal	x	
	APO 08.02: Align the strategy R&D with business expectations and identify opportunities for IT improve the business.	APO09.01	Identified gaps in IT services for the company.	x		Agreed next steps and action plans.	Internal	x	
		APO09.04	Service level performance reports. Action plans for improvement and remediations.	x					
		APO11.03	Root causes of failure to offer quality.		x				
	APO 08.03 Manage the relationship with the negligence.	DSS02.02	Service requests and incidents classified and prioritized.		x	Key decisions agreed	Internal		x
		DSS02.06	Close service requests and incidents. User confirmation of compliance or satisfactory resolution.		x				
		DSS02.07	Incident status and trend report. Request compliance status and trend report.	x					x

	APO 08.04 Coordinate and communicate.	APO09.03	Service level agreements (SLA).		x	Customer Responses	Internal		
		APO12.06	Risk impact communication.		x	Communication packages	Internal		
		BAI 05.05	Use and operation plan.		x	Communication plan	Internal		
		BAI 07.07	Supplemental support plan.	x				x	
		BAI09.02	Communications of service suspension times due to planned maintenance.	x				x	
		DSS03.04	Communication of acquired knowledge.		x				X
	APO 08.05 Provide contributions for the continuous improvement of services.	APO09.02	Service catalogues.	x		Definition of possible improvement projects	APO02.02; BAI03.11	x	
		APO11.02	Customer requirements for quality management. Service quality outcome, including customer feedback.	x		Satisfaction analysis	APO09.04	x	
		APO11.03	Results of quality monitoring for the provision of services and solutions.		x				X
		APO11.04	Results of quality reviews and audits.		x				
		BAI03.10	Maintenance plan.	x				x	
		BAI 05.05	Measurements and results of success.		x				X
		BAI 07.07	Complementary support plan.		x				X
		BAI 05.01 Establish the desire to change.	APO11.02	Service quality results, including customer feedback.		x	Communications from executive management on commitment to change	Internal	
	BAI02.01		Repository of requirements definitions. Acceptance criteria confirmed by interested parties.		x	Communication of change factors	Internal	x	
	BAI02.03		Risk register of requirements. Risk mitigation actions.						X
	BAI03.01		Approved high level design specification.	x					X

		BAI03.02	Approved detailed design specification.					x	
	BAI 05.02 Form an effective implementation team.	BAI02.01	Acceptance criteria confirmed by interested parties.		x	Common vision and goals	BAI01.02	x	
		Outside of COBIT	Organizational structure of the company.			Implementation team and roles	BAI01.04		X
		BAI03.03	Documented components of the solution.			Vision communication plan	BAI01.04		X
		BAI03.10	Updated solution components and related documentation.			Vision Communications	BAI01.05		X
				x		HR performance objectives HH aligned	APO07.04		X
						Quick wins identified.	BAI01.04	x	
						Benefits communication	BAI01.06	x	
	BAI 05.05 Enable operation and use.	BAI03.03			x	Operation and use plan	APO 08.04; BAI08.03; DSS01.01; DSS01.02; DSS06.02		X
		BAI03.10		x		Measurements and results of success	APO 08.05; BAI 07.07; BAI 07.08; MEA01.03	x	
	BAI 05.06 Incorporate new approaches.				x	HR performance review results H H.	APO07.04		X
						Awareness communications	Internal		X
						Compliance audit results	MEA02.02; MEA03.03	x	
	BAI 05.07 Sustain the changes.				x	Knowledge transfer plans	BAI 08.02; BAI 08.03		X
						Management Commitment Communications	Internal		X
						Operational Usage Reviews	MEA02.02		X

Fountain: Own elaboration based on COBIT 2019.

Next, the component of people, skills and competencies is presented with their respective abilities.

Table V: Evaluation of the municipal mayor's office of Ocaña focused on the component of people, skills and competencies.

PEOPLE, SKILLS AND COMPETENCES		FULFILLS		OBSERVATION
		YEAH	NO	
APO08 Manage relationships - BAI05 Manage organizational change	Relationship management		x	There is currently a gap with respect to relationship management, since there is no trust between the interested parties and this does not allow full compliance with the goals set and achieving the vision of the entity.
	Business change management		x	Currently there is a lot of resistance to change on the part of the entity's officials, which makes efficient change management difficult. Including, in turn, the little political will.
	Planning and managing change implementation		x	There are few processes that include planning and change management. The successful processes have been due to the will of the contractors and their strong ownership.
	Design and implementation in the organization		x	The entity's process map is old and very generalized, which means that different activities are represented by the same contractors and generate work overloads.

Fountain: Own elaboration based on COBIT 2019.

We continue with the evaluation of the policies and procedures component with its most relevant items, which can be seen in the following table.

Table VI: Evaluation of the municipal mayor's office of Ocaña focusing on the policies and procedures component.

PEOPLE, SKILLS AND COMPETENCES			FULFILLS	
			YEAH	NO
APO08 Manage relationships	Company relationship management policy - IT	Provides guidelines for establishing and maintaining relationships between business and IT. It fosters transparency, mutual trust and a shared focus on achieving strategic goals within the budget context and risk tolerance.		x
BAI05 Manage organizational change	Organizational change management policy	It provides a framework and outlines principles for managing organizational change. Reflects current legislation and provides good personnel management practice; ensures a consistent approach to managing change in the organization.		x

Fountain: Own elaboration based on COBIT 2019.

We continue with the culture, ethics and behavior component, which can be seen in the following table.

Table VII: Evaluation of the municipal mayor's office of Ocaña focused on the culture, ethics and behavior component.

PEOPLE, SKILLS AND COMPETENCES		FULFILLS	
		YEAH	NO
APO08 Manage relationships	Collaboration platforms		x
	Internal training and awareness services		x
BAI05 Manage organizational change	Tools and communication channels		x
	Monitoring tools		x

Fountain: Own elaboration based on COBIT 2019.

In the analysis and evaluation of the diagnosis of each of the COBIT objectives and practices previously evaluated, some findings were detected focused on different areas

that are a fundamental part of the entity's digital transformation process. It is for this reason that we seek to rectify and correct these findings through an effective and efficient adoption of digital transformation, together with articulated work and implementation of standards of excellence such as the APO08 and BAI05 management objectives and their respective practices. in addition to key business architecture instruments that strengthen the organization's capabilities, the use and appropriation of IT, which allows, among other things, to increase reliability and strengthen the relationship between the citizen and the municipality through high-quality services. quality.

For this reason, the formulation of a service management model is proposed that seeks to provide a solution to the shortcomings found and that, in turn, will allow providing a guiding tool for the other entities in the territory towards an effective adoption of different processes. of digital transformation, in conjunction with business architecture strategies and quality standards that are part of the core of the model.

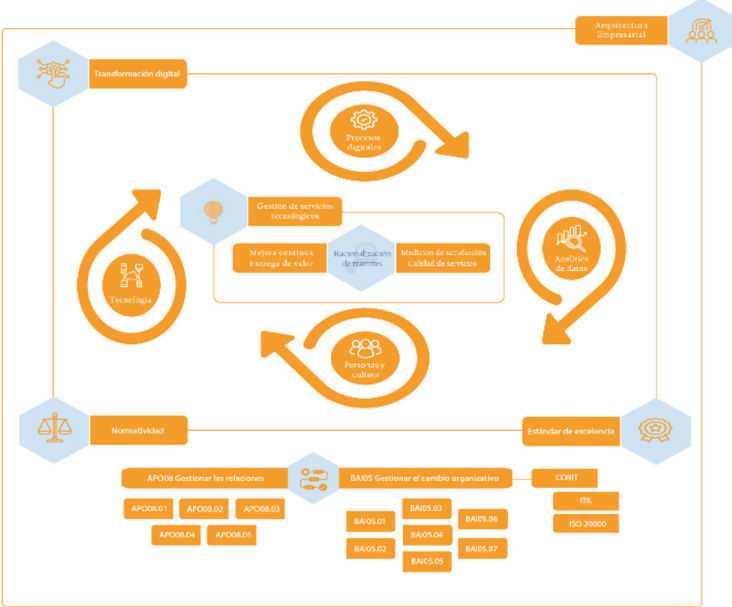


Figure 12. Proposed model. Source: Own elaboration.

Model description

To understand the model we must be clear that, for many years, businesses and the application of ICT have evolved, meeting their needs independently and forgetting the guidelines of the business as a whole. This leads to generating totally isolated architectures, which generate complications in technological and business governance.

This is where the work of a fundamental component in the model called enterprise architecture begins, which is defined according to [12], as the organizational logic of core business processes and IT infrastructure that reflects the standardization and integration of the enterprise business model. a company.

Based on this premise, enterprise architecture is included in the model because it addresses various cases in which organizational growth stops due to lack of planning, lack of business standards [13].

Because it is so important for the organization, it was decided to include this component along with the ICT strategic alliance. This allows technology decisions to respond to organizational needs and capitalize on opportunities, innovation and change.

To harmonize the innovations or technological modifications currently installed in an organization with the business objectives, it is necessary to work with standards of excellence, either a reference framework or also called business frameworks, which contribute to the process, but differ in 3 areas, the which are composition, approach and terms of reference. This is the case of Zachman, a (static) structural framework that is most effectively used as a model for artifact analysis, classification and meta-analysis of methods and frameworks, while TOGAF is a (dynamic) process that also includes the use of references. Process modeling guidelines [13].

IT governance, which continues the importance of standards, is not a specific discipline of enterprise architecture, but there are clear synergies between ITIL and COBIT.

That is why it was decided to include and work with said objectives and management practices previously evaluated in figures 10 and 11, where the results obtained indicate prioritizing two management practices related to APO08 and BAI05, which are based on mutual trust and transparent relationship management that presents strategic objectives and organizational change management that maximizes the ability to quickly and successfully implement sustainable organizational change within the company while minimizing risks.

Moving forward with the components of the model, all procedures related to public entities of the state must be governed by a series of legislations and regulations, which must be complied with and complied with by each of the entities, in this case those of territorial order.

For the business architecture component, the latest and most updated regulations defined as Resolution 1978 of May 26, 2023 issued by the Ministry of Information and Communications Technologies must be adopted, which indicates that the third version of the framework must be adopted. of business architecture reference for the Colombian state as the instrument to implement the architecture enabler of the digital government policy. And in the case of the digital transformation component, which is the next component to mention, it is guided by decree 1262 of July 22, 2022 issued by the administrative department of the public service, which indicates that the guidelines and standards are defined. applicable to public digital transformation.

As mentioned above, the next component is digital transformation, which carries a high implementation value in the model, since it is related to the business architecture

component, but this ends up being a reference guide focused on 4 (four) areas of the organization that can be measured periodically, which are digital processes, organizational culture, technology and data analytics.

In the case of territorial entities, article 147 of Law 1955 of 2019 establishes that national entities include a digital transformation component in their implementation plans, in accordance with the standards defined by the ministry for this purpose. Likewise, CONPES 3975 defines the national policy of digital transformation and artificial intelligence, in which an action is established by the digital government management to develop the guidelines and thus guarantee that public entities of the national order develop their digital transformation plans that help them focus their efforts on this topic.

That is why having the digital transformation component is essential to leverage the purposes of digital government, which allows promoting the development of initiatives that imply changes with a long-term vision and improve access to public information and the provision of more agile and effective services for society.

The integration and interoperability of all these types of strategic and business components reflected in the model manage to promote the management of technological services and strengthen the rationalization of services, focused on activities related to the simplification, standardization, elimination, optimization and automation of procedures and administrative procedures, which manage to reduce costs, encourage the continuous improvement of procedural processes and benefit society with quality services and strengthen the citizen-state relationship.

Conclusions

The definition and implementation of an IT management model in a public entity must be structured with the methodological frameworks established by the MinTIC and developed using good IT practices, international standards and reference frameworks given that there is alignment that allows the addition of elements of worth.

According to the analysis carried out, the poor perception that citizens have based on the provision of formalities of public entities in Colombia through the survey carried out by (GME, 2021), which showed results that indicate that more than 70% of those surveyed affirm that the formalities and services, which positively impact the citizen-State relationship. These results, together with the measurements observed through FURAG and MIPG, indicate the shortcomings that currently exist since, in addition, there is a percentage difference of 25.2 in terms of the digital government index and 26.4 percentage points in terms of the institutional performance index among national and territorial entities.

In the same way, the current state of the services and procedures that are included in each of the inventories of the municipalities of the province of Ocaña was diagnosed at the level of technological management, using the page of the unique procedure information system (SUIT). For the diagnosis, it was possible to verify that the entities

have worked on the respective inclusion process in their respective inventories, although the municipalities of Ocaña, convention and San Calixto are still in the process of inclusion and management for their respective registration and only the municipality of Carmen has completely included her procedures in the SUIT.

The technological management model was structured for the municipalities of the province of Ocaña, validating and incorporating the APO and BAI management objectives of COBIT. In the structure, different artifacts were analyzed, such as the application of the measurement instrument to the main actors of the entities under study, in which the similar shortcomings that occur in mayors' offices in terms of digital transformation and business architecture could be seen. In addition, the maturity levels of the entities were analyzed through the evaluation issued by the Ministry of Information and Communications Technologies (MinTIC), in which 3 axes were evaluated such as architecture, information security and digital citizen services, and the results were a wide difference between the San Calixto mayor's office in terms of information security and architecture with respect to the other entities.

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