

Enhancing Citizen Satisfaction in Developing Countries through Process Digitalization and ISO 20000: A Case Study from Cameroon

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Abstract

This research examines the difficulties associated with improving user experience in public services in developing countries in general and Cameroon in particular, with a focus on the digitalization of activities and the implementation of the ISO 20000 standard. The study intends to develop an operational framework that is methodologically sufficient to enable public services organizations to move toward digital transformation and achieve user satisfaction as a primary service quality objective. To achieve this, we used the Design Science Research methodology to prescribe and verify the framework. The case study of the Criminal Records Request process helps to evaluate our framework and compare citizen satisfaction before and after. This study has contributed to filling the knowledge gap by developing a contextual and practical framework model aimed at the public service digital transformation in Cameroon. The framework focuses on concrete steps to be taken by decision-makers and public service organizations for them to achieve desired outcomes in digital transformation and adoption of the ISO 20000 standard.

Keywords

Digital Transformation, Process Digitalization, ISO 20000-1, User Experience, User-Centric Design, Design Science Research

1. Introduction

For several years now, information and communication technologies (ICT) have played a very important role in our lives and in society in general. Governments around the world have made the use of ICT a clear ambition for modernizing and

improving the lives of their populations. This is in line with the United Nations' recommendations to integrate digital technologies into various aspects of life, including public services ([1], p. 1). From Estonia's pioneering e-governance initiatives [2] to Singapore's smart city solutions [3], nations are harnessing technology to streamline processes, enhance efficiency, and improve citizen satisfaction.

In the context of accelerated modernization of African public administrations, Cameroon is at a turning point, as digital transformation is emerging as an essential lever for administrative modernization. According to the National Development Strategy Document 2020-2030 (SND30), in Chapter 6, Title 6.3, Cameroon intends to improve the quality of public services through the modernization of public administration, the optimization of the functioning of public administration, the improvement of the State's human resources management, and the strengthening of the fight against corruption, embezzlement, and conflicts of interest. Faced with growing demands for efficiency, transparency, and speed, public service organizations must modernize their management processes. The digitization of management processes, coupled with the adoption and implementation of the ISO 20000 standard on IT service management (ITSM), represents a strategic opportunity to transform the user experience of public services in a sustainable manner and could be a structuring solution for this transformation [4]. This article shows how the implementation of the international ISO 20000 standard can serve as a methodological framework for significantly improving the quality of digital public services in Cameroon and redefining the relationship between the administration and citizens.

The objective of our research is to propose a theoretical framework for the digital transformation of public service organizations that would enable us to improve user satisfaction through the digitization of management processes, considering the concerns of users and all stakeholders, and the implementation of the requirements of the ISO 20000-1 standard for IT service management.

To conduct our research, we have adopted the epistemological stance of Design Science, using Design Science Research as our research method. We have used the approach developed by Dresch *et al.* [5].

Against this backdrop, this research endeavors to answer the following research question: What methodological and operational framework is necessary for Cameroonian Public Service Organizations to succeed in their digital transformation to guarantee a quality and satisfactory service to users?

To answer this question, this research will help develop an artifact covering the following dimensions:

1. Business Process Digitalization based on the agile SCRUM framework.
2. User or Citizen Centric Design.
3. Full adoption of the ISO 20000 standard will guarantee the improvement of public services users' satisfaction in Cameroon.

The remainder of the paper is structured as follows. First, we will describe our context and the journey through the literature review; second, our positioning and

the primary objective of the article; third, we outline our designed artifact in the proposed methodological framework. In section five, we evaluate our framework within a case study for the Cameroon Criminal Records Request Process. Section six covers results and discussions and then closes with the conclusion.

2. Literature Review

2.1. Digital Transformation in Public Service Organizations

Recent studies emphasize that digital transformation in public services necessitates a shift towards service innovation, data-driven decision-making, and agile methodologies [6]. AI-powered automation, cloud computing, and blockchain technology are increasingly being adopted to enhance efficiency in public service delivery [7]. Mobile apps, chatbots, and digital inclusion programs are expanding access to public services and improving citizen engagement [8]. Blockchain technology and open data initiatives are enhancing transparency and accountability in public services [9]. Online consultations, participatory budgeting platforms, and social media are empowering citizens to engage with government and provide feedback on public services [10]. This comes with some challenges, such as Cybersecurity Threats, the increasing sophistication of cyberattacks targeting government systems; Data Privacy Concerns, ethical and legal issues related to the collection, use, and storage of citizen data; Digital Divide, unequal access to technology and digital skills, particularly among marginalized communities; and Algorithmic Bias, the potential for bias in AI algorithms used in decision-making.

2.2. ISO 20000: IT Service Management (ITSM) for Public Services

ISO 20000 is an international standard for IT service management (ITSM). It provides a framework for organizations to deliver high-quality IT services that meet business needs. A service is essentially a means of delivering value to customers. This is done by facilitating outcomes that customers want to achieve without the ownership of specific costs and risks [11]. While service management is a set of **specialized** organizational capabilities for providing value to customers in the form of services.

ISO 20000-1:2018 specifies requirements for an organization to establish, implement, maintain, and continually improve a service management system (SMS). It ensures that IT services are aligned with business requirements and delivered effectively. It covers all aspects of IT service management, including service design, transition, delivery, and improvement. **Figure 1** below shows the service life cycle as presented by ISO 20000.

Service Strategy: The objective of service strategy is to offer better services than the competition. Of course, to be successful in the longer term, as the industrial landscape adjusts to the inevitable economic, social, technological, and political changes, organizations must think long term. So, service strategy is not just about the strategy for individual services, but also about positioning the IT service provider for the long haul. It also includes the design, development, and implemen-

tation of service management as a foundation for sound governance and as part of the organization's strategic asset base [11].

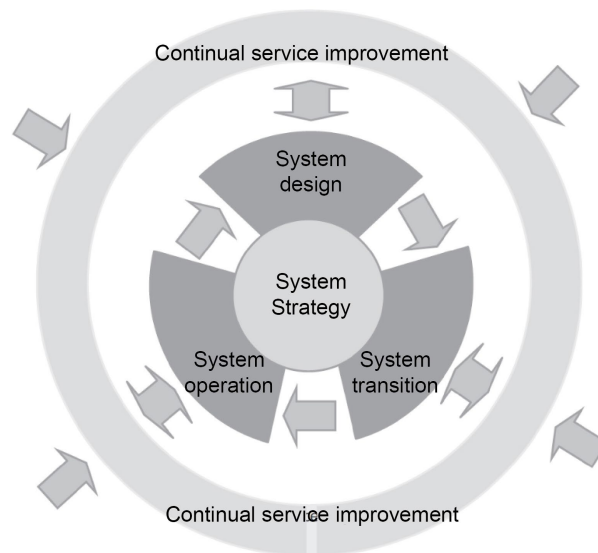


Figure 1. The service life cycle [11].

Service Design: Once an organization has determined the IT strategy it wishes to pursue, it uses the service design phase of the lifecycle to create new services that service transition then introduces into the live environment. In so doing, service design aims to take the necessary steps to ensure that the new service will perform as planned and deliver the functionality and benefits intended by the business [11].

Service Transition: There has frequently been a disconnection between the development and operations departments within IT, which has consequently led to many failed implementations of new or changed services. Service transition is concerned with bridging that gap smoothly, ensuring that operational requirements are fully considered and catered for before anything is moved into the live environment, including documentation and training for users and support staff. Service transition is also responsible for the decommissioning and removal of services that are no longer required, and for the transfer of a service from one service provider to another [11].

Service Operations: Service operation is the phase of the IT service management lifecycle that is responsible for 'business as usual' activities. If services are not utilized or are not delivered efficiently and effectively, they will not deliver their full value, irrespective of how well designed they may be. It is service operation that is responsible for utilizing the processes to deliver services to users and customers.

Service operation is where the value that has been modeled in service strategy and confirmed through service design and service transition is delivered. Without service operation running the services as designed and utilizing the processes as designed, there would be no control and management of the services. The pro-

duction of meaningful metrics by service operation will form the basis and starting point for service improvement activity [11].

Continual Service Improvement: Once a service management solution has been implemented, it is essential not to sit back and think that the job has been done. All aspects of the environment will be continually changing, and the service provider must always continue to seek improvements. Continual service improvement is responsible for ensuring that these improvements are identified and implemented. The performance of the IT service provider is continually measured, and improvements are made to processes, IT services, and the IT infrastructure to increase efficiency, effectiveness, and cost-effectiveness [11].

ISO 20000 is highly relevant to public service organizations for several reasons:

- **Improved Service Delivery:** It helps public sector organizations deliver more reliable, efficient, and effective IT services to citizens and internal users.
- **Increased Efficiency:** By standardizing processes and focusing on continuous improvement, ISO 20000 can help public sector organizations reduce costs and improve efficiency.
- **Enhanced Accountability:** The standard provides a framework for measuring and monitoring service performance, which can improve accountability and transparency.
- **Better Citizen Satisfaction:** Improved IT services can lead to increased citizen satisfaction and trust in government.
- **Risk Management:** ISO 20000 helps organizations identify and manage risks associated with IT service delivery, reducing the likelihood of service disruptions and security breaches.
- **Compliance:** In some jurisdictions, ISO 20000 certification may be a requirement for public sector organizations or a condition for government contracts.

Benefits for Public Service Organizations:

- **Better alignment of IT services with citizen needs** ensures that public services are designed and delivered in a way that meets the needs of the people they serve.
- **Improved efficiency and cost savings:** This approach streamlines IT processes and reduces duplication of effort.
- **Increased transparency and accountability:** This provides a framework for measuring and reporting on service performance.
- **Enhanced security and risk management:** It protects sensitive data and reduces the risk of service disruptions.
- **Improved reputation and citizen trust:** This demonstrates a commitment to quality and excellence in service delivery.
- **Implementation Considerations:**
 - **Commitment from Leadership:** Successful implementation requires strong support from senior management.
 - **Gap Analysis:** A gap analysis should be conducted to identify areas where the organization's current practices do not meet the requirements of ISO 20000.

- **Training and Awareness:** Employees need to be trained on the requirements of the standard and how it applies to their roles.
- **Documentation:** A comprehensive set of documentation should be developed, including policies, procedures, and work instructions.
- **Continual Improvement:** The SMS should be continuously monitored and improved to ensure that it remains effective.

2.3. User-Centric Design (UCD)

User-centric design (UCD) is a design philosophy and a process focusing on the needs, wants, and limitations of the end-users of a product or service [12]. When applied to public service delivery, it can significantly improve the effectiveness, efficiency, and accessibility of those services [13]. At its core, UCD is about:

- **Understanding Users:** Thoroughly researching and understanding the target users, their needs, their contexts, and their goals.
- **Involving Users:** Engaging users throughout the design process, from initial research to testing and iteration.
- **Iterative Design:** Designing and testing prototypes, gathering feedback, and iterating on the design based on that feedback.
- **Accessibility:** Ensuring that the service is accessible and usable by people with diverse abilities and needs.

UCD is important for public service delivery [14] for the following reasons:

- **Increased Relevance:** Public services designed with UCD are more likely to meet the actual needs of citizens, leading to greater utilization and satisfaction.
- **Improved Efficiency:** Services that are easy to use and understand reduce errors, support requests, and the need for extensive training.
- **Enhanced Accessibility:** UCD principles emphasize accessibility, ensuring that services are available to all citizens, including those with disabilities or limited technical skills.
- **Greater Equity:** By considering the needs of diverse user groups, UCD can help reduce disparities in access to public services.
- **Increased Trust:** When citizens feel that their needs are being considered and that services are designed with them in mind, trust in government increases.
- **Better Outcomes:** Ultimately, UCD leads to better outcomes for citizens, whether it's accessing healthcare, applying for benefits, or interacting with government agencies.

2.4. Design Science Research (DSR)

Design Science Research (DSR) is a powerful methodology that we have adopted for creating innovative solutions to real-world problems, especially when existing solutions are inadequate or nonexistent. It is well-suited for fields like information systems, engineering, and organizational **science** [15]. **Design Science** is a science that seeks to develop and design solutions to improve existing systems, solve problems, or create new artifacts that contribute to better human performance, whether

in society or in organizations [16].

In this research, we will follow the Design Science Research methodology proposed by Dresch *et al.* [5] (Figure 2), which comprises the following key stages: (1) Identification of the Problem, (2) Proposition of the artifacts to solve a specific problem, (3) Design and Development of the artifact, (4) Evaluation of the artifact, (5) Conclusion, and (6) Communication of the results.

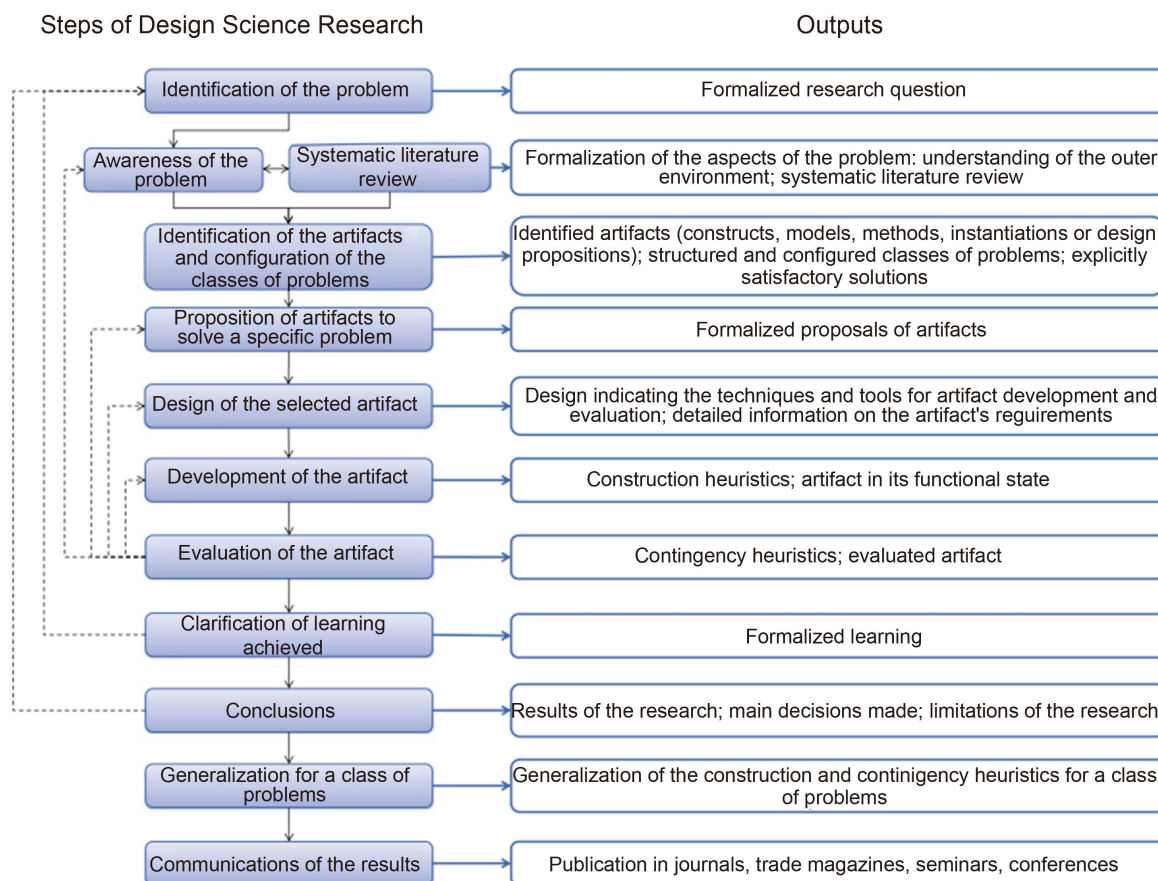


Figure 2. Design science research step by step [5].

Problem Identification aims to formalize the research question and all aspects of the problem, such as understanding the external environment and conducting a systematic literature review. The artifact that will help solve the problem should be clearly formalized. It starts with artifact identification. It could be constructs, models, methods, instantiations, or design propositions. The structured and configured classes of the problem are elaborated, as well as explicitly satisfactory solutions.

At the stage of Design and Development of the artifact, it is expected to draw the design that indicates the techniques and tools that are used to develop the artifact and its evaluation. List detailed information for the artifact's requirements.

At the end of the development of the artifact, two primary outputs are expected. The first output is the artifact in its functional state. The second output consists

of the construction learnings that can be formalized from the artifact's development. It is important to remember that construction learnings derived from the development of artifacts constitute one of design science's contributions to advancing knowledge. Once an artifact has been built, it can be evaluated. The behavior of the artifact is observed and measured toward a satisfactory solution to the problem [5]. Once research is completed, it is important for the developed artifact to be generalized for a class of problems. The artifact, together with its construction and contingency heuristics, must be generalized for a certain class of problems. In that reasoning process, the solution of a specific problem seeks to be generalized to a certain class of problems [17].

Finally, it is essential to communicate results. This communication can be performed through publications in journals, trade magazines, seminars, and conferences, among others, with the goal of reaching as many interested parties as possible. These interested parties can be either in academia or in organizations [5].

3. Positioning and Objective of the Article

While walking through various articles written on Cameroon's Public Services, we found very few that address service quality and process digitalization. Two of them have captured our attention:

Roger Atsa Etoundi & al. have worked on "IMPROVING THE QUALITY-OF-SERVICE DELIVERY IN A PUBLIC SERVICE WORKFLOW BASED ON THE ANT THEORY: A CASE STUDY IN CAMEROON". They developed a solution that helps to monitor the flow of citizens' files at each stage of their treatment, enhancing the delay time between two stages [18].

Bernabé Fochie Tuebou has made some research on "The Digitization of Public Services and Its Contribution to the Quality of Service in Relation to User Satisfaction." He demonstrated that the introduction of computing systems and computing solutions improves the perception of the public services organizations and increases citizens' satisfaction [1].

From our perspective, the digitalization of business processes is not sufficient to guarantee users' satisfaction. Our aim is to develop a framework that, in addition to thorough business processes digitalization, suggests the implementation of the best practices of Information Technology Service Management (ISO 20000-1) and takes into consideration the end users' and third parties' requirements.

This research provides a novel, validated framework that holistically combines process digitalization, formal service management standards, and user-centric principles within the context of a developing nation's public sector.

4. Proposed Methodological Framework

4.1. The Digital Transformation Framework

When it comes to modeling in the digital transformation, process diagrams serve as vital communication instruments, enabling clear visualization of workflows, strategies, and stakeholder interactions. The efficiency of these diagrams depends

on the tools and design methodologies employed in their creation.

The artifact that we designed in this article, **Figure 3**, represents the Digital Transformation Framework. The diagram was produced using advanced diagramming software supporting comprehensive shape manipulation, connector customization, and styling features. The primary software tools considered include Microsoft Visio and Microsoft Word, recognized for their capability to support professional process visualization.

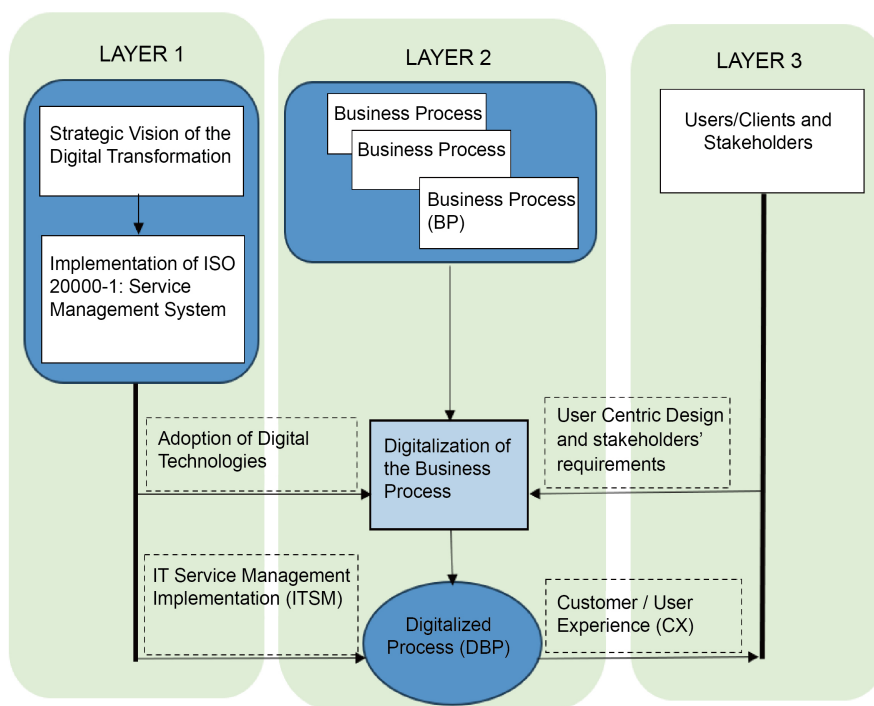


Figure 3. Digital transformation framework (authors).

- Shape and Container Components

Utilized to depict different process stages, organizational contexts, and stakeholder environments, the features employed include customizable geometric shapes such as rectangles and ovals, which support size modification, color fills, and border styling. Containers or grouped shapes were used to organize related components logically, enhancing readability and clarity.

- Connector and Flow Lines

Arrows and connecting lines visualized process flows and relationships. These were created via dedicated connector tools, allowing for precise placement and styling, including line thickness, color, and arrowhead customization. Support for dashed or dotted lines facilitated the differentiation of process types or interactions.

- Text Elements

Labels and process descriptions were incorporated through text boxes embedded within shapes or positioned adjacently. The software's text editing capabil-

ities allowed font selection, size adjustment, and alignment control, ensuring that information was clear and legible.

- Color and Style Application

Color schemes were strategically employed to encode informational distinctions such as process categories, environment types, and process outcomes, thereby supporting visual hierarchy. Fill colors, border styles, and background shading options contributed to the diagram's professional appearance.

- Layer Management and Object Grouping

These features provided control over diagram complexity. Layering allowed overlapping components to be managed effectively, while grouping facilitated simultaneous editing and movement of related elements, maintaining structural integrity.

The construction of the digital transformation framework diagram benefited from the advanced graphical and organizational features of specialized diagramming software. Shape customization, connector flexibility, text management, styling options, and layering capabilities enabled the development of a clear, professional, and informative visual representation. Such tools are indispensable in academic and professional domains, supporting the effective communication of multifaceted process frameworks.

4.2. Description of the Artifact

Figure 3 shows the framework of digital transformation focusing on three layers. Layer 1 is about the adoption and implementation of ITSM, Layer 2 is the business process digitalization, and Layer 3 focuses on the consideration of user and stakeholder requirements during digitalization. Here is a summary:

Layer 1: Adoption and Implementation of ISO 20000-ITSM

- Strategic Vision of Digital Transformation: This includes ISO 20000-1, which is an IT Service Management System standard.
- Adoption of Digital Technologies: Involves a massive integration of digital tools for the digitalization of business processes.

Layer 2: Business Process Digitalization

- Business Process (BP): Represents the core processes subject to digitalization.
- Digitalization of the Business Process: The central transformation mechanism, likely involving automation and enhancements through digital tools. The use of Agile Methodology like SCRUM is key to delivering users' expected results.
- Digitalized Process (DBP): The outcome of digitalization, leading to more efficient processes and value creation.

Layer 3: User-Centric Design

- Users/Clients and Stakeholders: This indicates the importance of designing around requirements from customers and stakeholders.
- User-Centric Design and Stakeholder Requirements: Focus on Customer/User Experience (CX) for better service delivery.

5. Case Study: Application of the Digital Transformation Framework to the Cameroon Criminal Records Request Process

5.1. The Process

The Criminal Procedure Code, Book II Part IV, Sections 573 to 583 describes the procedure to establish a criminal record bulletin. Bulletin No.3 (B3) is the most requested and the only one among the 3 bulletins that is delivered directly to the person concerned. It mentions only sentences of loss of liberty not expunged by amnesty or rehabilitation.

As shown in **Figure 4**, An individual who needs a B3 should go to the Court of First Instance (CFI) of his/her place of birth and write an application to request it. To show proof of identity, a photocopy of the birth certificate or of the National Identity Card is required. To attest to the authenticity of these two documents, two fiscal stamps shall be affixed on the documents.

After the Registrar has checked whether any condemnation or sentence laid on a person and worth mentioning on a B3 has been noted, he will then fill in the form and mention the necessary information in the document. The document will be signed by both the Registrar-in-Chief and the State Counsel of the Court. Generally, the standard time for a B3 to be established is 24 hours. Moreover, litigants can also deliver a B3 at the Ministry of Justice in Yaoundé, where the central record index is lodged.

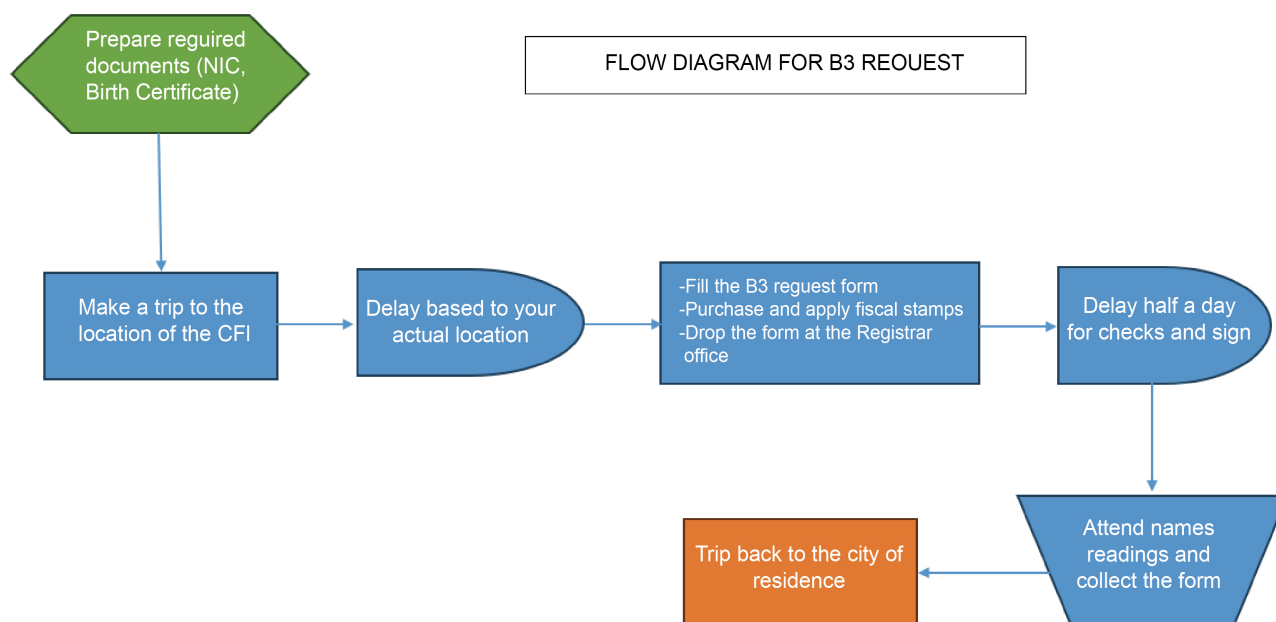


Figure 4. Flow diagram for B3 request (author).

5.2. The Problem

The main concern to be addressed here is the fact that one who needs a B3 must go physically to the Court of First Instance of their place of birth to apply for it.

They should then wait on average for 24 hours for it to be established and delivered.

In general, people do not live in the city of the CFI of their place of birth. Consequently, the acquisition of a B3 usually:

- Requires traveling (with all the related risks),
- Demands spending more money,
- Can be delayed up to a month depending on the actual place of residence.

5.3. The Resolution

5.3.1. Digitalization of the B3 Request Process

The digitalization was done following the agile SCRUM framework:

- 3 developers;
- 1 Scrum Master;
- Product Owner;
- Sprint length = 1 week.

The applications and platforms used are:

Table 1 below lists the applications and platforms used to implement the solution for the B3 request:

Table 1. Applications and platforms (source: author).

#	Applications and Platforms	Comments
1	Azure DevOps	Used for the project's agile management
2	Pycharm and Android Studio	Integrated Development Environment
3	Python, JavaScript, Dart, and Shell	Programmable languages
4	Django and Flutter	Mobile Frameworks
5	Git and Github	Versioning tool
6	Docker and Traefik	Used for load balancing
7	Web Server	Apache
8	Operating System	Ubuntu by Linux
9	Database Management System	MySQL
10	Postman	Used for functional testing
11	Cloud Platform	Azure

5.3.2. User-Centric Design

Empirical users' requirements have been collected by the product owner to tailor the solution and fit their needs.

Continuous evaluation improvement principles were actively used so that end users could witness changes as soon as they were implemented and published.

Figure 5 presents the Use Case Model of the B3 Request solution, where the Requestor only has to "submit" and "pay" for his request and will receive the signed B3 form at his present location address. All the rest is abstracted for the requestor and is handled by field agents connected to the application.

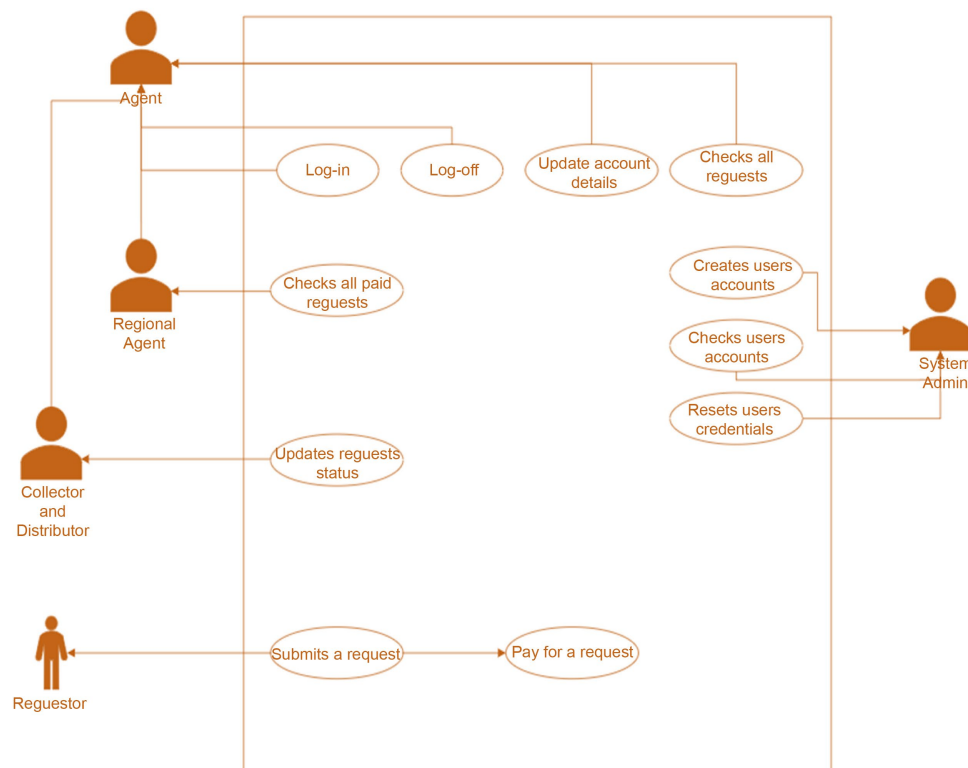


Figure 5. B3 request use case model (author).

5.3.3. Implementation of ISO 20000 Standards

To ensure end-user satisfaction, we have selected a few ITSM processes that have been implemented:

Table 2. ITSM processes implemented for B3 request.

#	ITSM Processes	Comments
1	Service Demand	B3 request is the service that has been provided so far.
2	Request Management	Users connect to the application and submit B3 requests.
3	Incident Management	Any service interruption is addressed in a timely manner. Users use phone numbers and email addresses to report incidents.
4	Problem Management	Recurrent incidents' root causes are found and resolved to maintain service delivery.
5	Continues Service Improvement	The development team continues to enhance and improve the application.

a. Request Management:

Purpose: Provide a controlled path for users to request a B3 (criminal records/extract) through EasyPro and get an efficient, tracked outcome.

Scope: All B3 requests submitted via the EasyPro portal by citizens.

Trigger User runs EasyPro and submits a B3 request form.

Standard Workflow

1. Submit—User runs EasyPro and completes the B3 request form (required fields, attachments).
2. Auto-registration—The system assigns a unique Request ID and timestamps it.
3. Processing—The back-office/B3 processing team performs the required checks and actions.
4. Closure & Notification—Status set to Closed; user receives confirmation and physical documents as outcomes.

Roles & RACI (Summary)

- Requestor (User): Creates request, provides information (R).
- Service Desk: routes, communicates (A/R).
- B3 Processing/Back-office: Executes processing (R).
- Process Owner: Defines policy/SLAs (A).
- Application Support: Fixes platform issues impacting requests (C).

Channels & Tools

- Primary: EasyPro application (self-service portal).
- Records: Request ticket with audit trail and attachments.

Key SLAs/KPIs (examples)

- Acknowledgement within 5 minutes (auto).
- Fulfillment target (e.g., 1–5 business days).
- KPIs: percentage fulfilled on time, average fulfillment time, first-pass yield, backlog age.

b. Incident Management (Service Disruption):

Purpose: Restore EasyPro service as quickly as possible and minimize business impact.

Scope: Any unplanned interruption, degradation, or failure affecting EasyPro (portal, APIs, notifications).

Triggers / Reporting Channels

- Users report incidents via phone or email to the Service Desk.

Standard Workflow

1. Service Desk records incidents with unique Incident IDs, callers, contact channels (phone/email), and impacts/urgencies.
2. Categorize & Prioritize—Assign a category (e.g., login, performance, notification), and determine priority using impact × urgency (P1–P4).
3. Initial Diagnosis—Service Desk performs quick checks and workarounds; communicates reference number to user.
4. Escalation—If not resolved quickly, escalate to Application Support or the vendor; invoke the major incident path for P1.
5. Investigation & Resolution—Identify root cause/workaround; implement fix or rollback.
6. Recovery & Verification—Confirm EasyPro is stable; the user validates that the service is restored.

7. Closure—Document resolution, classify the cause, and close the ticket; notify affected users.

8. Post-Incident Review (for P1/P2) —Captures lessons learned and preventive actions.

Roles & RACI (Summary)

- User/Caller: Reports issue (R).
- Service Desk: Single point of contact, triage, communication (A/R).
- Application Support/Developers: Technical diagnosis & fixes (R).
- Incident Manager (for majors): Coordinates major incidents (A).
- Problem Management (follow-up): Drives root-cause and prevention (C).

Communication

- Acknowledgement is sent by email or phone immediately after logging.
- Status updates at defined intervals by priority (e.g., P1 hourly, P2 every 2 - 4 h).
- Resolution and closure notice via the same channel used for reporting.

SLAs/KPIs (examples)

- Response: P1 within 15 minutes; P2 within 30 minutes.
- Resolution targets (e.g., P1: 4 hours; P2: 8 business hours).
- KPIs: MTTR, % resolved within SLA, incident volume by category, and reopen rate.

Figure 6 shows how the citizen submits their request for B3.

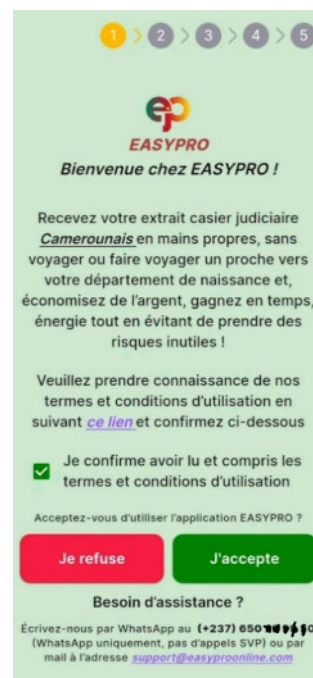


Figure 6. EasyPro home page.

6. Results and Discussion

The satisfaction survey has been sent to a group of citizens who have already used

the application to request B3. A total of 28 participants completed the survey, yielding a response rate of 56%. The demographic characteristics of the respondents are presented in **Figure 7**. The sample consisted of 14% female and 86% male participants, with the age distribution shown in the **Figure 7**.

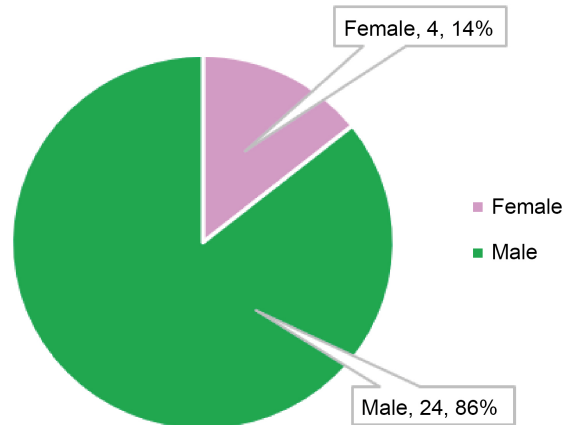


Figure 7. Distribution of gender types.

Figure 8 shows the ages of citizens who have used the application to submit their B3 request form. We can see that those between 25 and 35 are 50% of the total. Citizens aged less than 25 years old are 21%; those between 36 and 45 years old are 25%; and those who are between 46 and 60 years old are 4%.

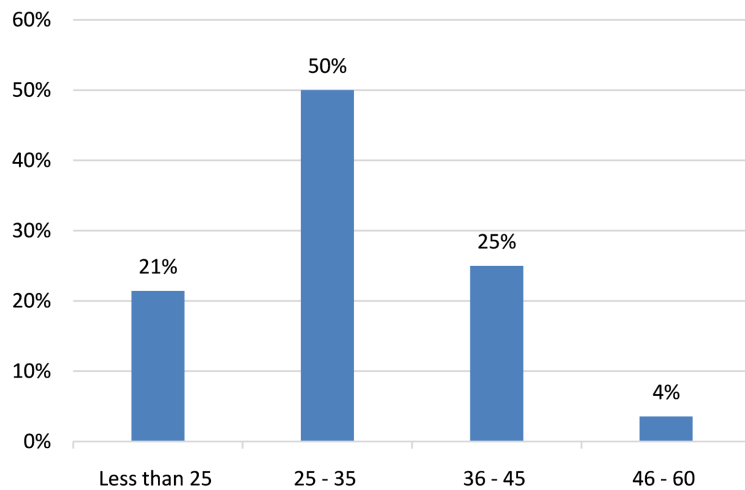


Figure 8. Distribution of the ages.

93% of citizens reported having already requested B3 before the digitalization, and they encountered issues among which those reflected in **Figure 9**. The trips and related expenses account for more than 35% of the issues, followed by administrative hassles and service delays.

The use of digital solutions has brought tangible consequences to the users. **Figure 10** shows the domains that have been improved due to the digitalization of

the B3 request. The number of trips has been reduced; the time spent requesting and waiting for the delivery has also been consistently reduced. The application simplifies procedures and increases transparency.

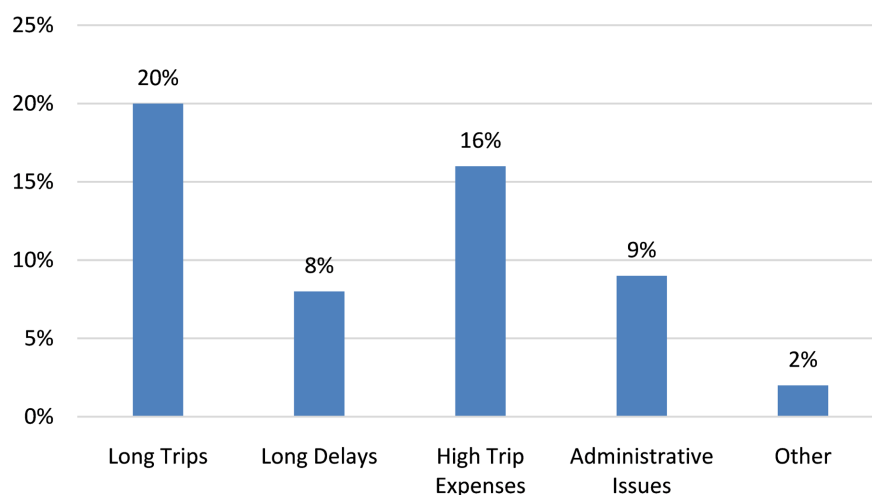


Figure 9. Difficulties before digitalization.

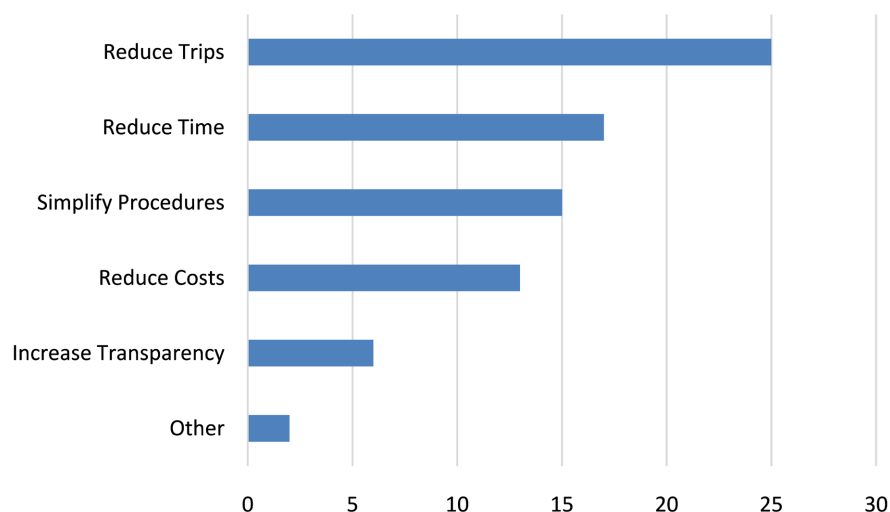


Figure 10. What digitalization has improved.

75% of application users are satisfied and very satisfied with the service level agreement, stating they have received their B3 according to the announced delivery time. 65% confirmed they have received the notifications at each stage of the process. Additionally, 80% reported that they received assistance from the help desk when needed.

As shown in **Figure 11**, the overall satisfaction for using the application to request B3 is 3.36 stars.

Figure 12 shows the cloud of words that have been used to express satisfaction with the application. The most common words used by users are: Thank, Excellent, Service, Professional, quality, practical, etc.

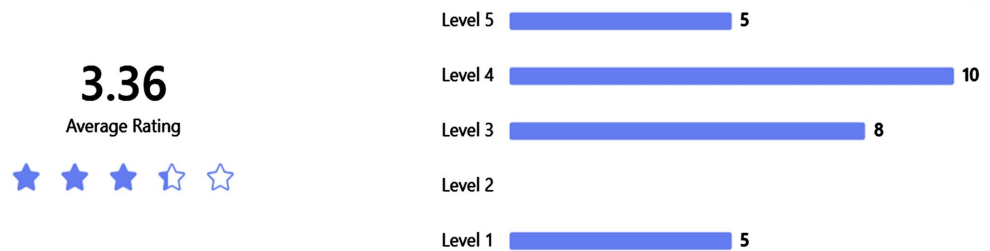


Figure 11. Overall Satisfaction.



Figure 12. Cloud of words from application verbatim.

7. Conclusions

This research set out to investigate how the integration of process digitalization, user-centric design, and ISO 20000 standards can enhance citizen satisfaction in public service delivery, using Cameroon as a representative case of developing countries. Through the adoption of the Design Science Research methodology, we developed and validated a comprehensive digital transformation framework tailored to the realities of public sector organizations. The proposed framework combines business process digitalization, IT service management best practices, and systematic consideration of user and stakeholder requirements into a coherent model designed to support effective and sustainable digital transformation.

The empirical application of this framework to the criminal record request process (Bulletin No. 3) demonstrated its practical value and transformative potential. The results revealed notable improvements in service delivery, including the reduction of physical travel, shorter processing times, simplified administrative procedures, and enhanced transparency. Furthermore, survey findings showed positive levels of user satisfaction, particularly regarding service timeliness, communication, and support quality. These outcomes confirm that digital transformation, when implemented within a structured service management framework

and guided by user-centric principles, can substantially improve public service quality and foster greater trust between administrations and citizens.

The incorporation of ISO 20000 processes played a pivotal role in institutionalizing service quality through structured governance, continuous service improvement, and enhanced responsiveness to user needs. This alignment not only improved operational efficiency and accountability but also contributed to strengthening institutional credibility and citizen trust.

The findings carry significant implications for public sector modernization efforts across developing contexts. They emphasize that successful digital transformation extends beyond technological deployment and must be underpinned by process reengineering, international service management standards, and systematic engagement with user expectations. Future research should explore the scalability of the proposed framework across other public services and evaluate its long-term effects on governance effectiveness, transparency, and citizen engagement.

In sum, and despite the reduced number of responses received that could alter the generalization of the outcomes, this study demonstrates that the deliberate integration of ISO 20000 standards, user-centric design, and process digitalization constitutes a robust pathway toward achieving citizen-oriented public service transformation. Such an approach offers a strategic and sustainable means of improving service quality, enhancing institutional performance, and strengthening the relationship between governments and the citizens they serve.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Tuebou, B.F. (2024) The Digitization of Public Services and Its Contribution to the Quality of Service in Relation to User Satisfaction. *Open Journal of Applied Sciences*, **14**, 2697-2716. <https://doi.org/10.4236/ojapps.2024.149177>
- [2] Semenzin, S., Rozas, D. and Hassan, S. (2022) Blockchain-Based Application at a Governmental Level: Disruption or Illusion? The Case of Estonia. *Policy and Society*, **41**, 386-401. <https://doi.org/10.1093/polsoc/puac014>
- [3] Ibrahim, Y. (2022) Smart Nation Initiatives and Its Impact. In: Mokhtar, I.A. and Ibrahim, Y., Eds., *Social Context, Policies, and Changes in Singapore*, World Scientific, 451-462. https://doi.org/10.1142/9789811247750_0027
- [4] Sarwar, M.I., Abbas, Q., Alyas, T., Alzahrani, A., Alghamdi, T. and Alsaawy, Y. (2023) Digital Transformation of Public Sector Governance with IT Service Management—A Pilot Study. *IEEE Access*, **11**, 6490-6512. <https://doi.org/10.1109/access.2023.3237550>
- [5] Dresch, A., Lacerda, D.P. and Antunes, J.A.V. (2014) Design Science Research. In: Dresch, A., Lacerda, D.P. and Antunes Jr., J.A.V., Eds., *Design Science Research: A Method for Science and Technology Advancement*, Springer International Publishing, 67-102. https://doi.org/10.1007/978-3-319-07374-3_4
- [6] Raihan, A. (2023) The Influence of Digital Transformation on Environmental Sus-

tainability.

- [7] Adeola, O.J. (2024) Strategies for Information Technology Managers to Mitigate Data Manipulation Challenges within Healthcare Cloud.
- [8] Netshirando, V., Munyoka, W. and Kadyamatimba, A. (2024) Citizen Perceptions of Digital Transformation in Local Municipalities: The Case of South Africa. *South African Journal of Information Management*, **26**, a1804. <https://doi.org/10.4102/sajim.v26i1.1804>
- [9] Macaulay, B., Reinap, M., Wilson, M.G. and Kuchenmüller, T. (2022) Integrating Citizen Engagement into Evidence-Informed Health Policy-Making in Eastern Europe and Central Asia: Scoping Study and Future Research Priorities. *Health Research Policy and Systems*, **20**, Article No. 11. <https://doi.org/10.1186/s12961-021-00808-9>
- [10] Jacobs, S. (2024) The Challenges of Participatory Administration. *Journal of the University of California*, **58**, 323.
- [11] Sansbury, J., Brewster, E., et al. (2016) IT Service Management. 3rd Edition. BCS Publishing.
- [12] Borkowski, S., Crowley, J.L., Letessier, J. and Berard, F. (2006) User-Centric Design of a Vision System for Interactive Applications. *4th IEEE International Conference on Computer Vision Systems (ICVS'06)*, New York, 5-7 January 2006, 9. <https://doi.org/10.1109/icvs.2006.61>
- [13] Roy, R., Goatman, M. and Khangura, K. (2009) User-Centric Design and Kansei Engineering. *CIRP Journal of Manufacturing Science and Technology*, **1**, 172-178. <https://doi.org/10.1016/j.cirpj.2008.10.007>
- [14] Černežel, A. and Heričko, M. (2013) A User-Centric Approach for Developing Mobile Applications. *7th International Conference on Knowledge Management in Organizations: Service and Cloud Computing*, Vol. 172, 455-465. https://doi.org/10.1007/978-3-642-30867-3_41
- [15] Hevner, A.R., March, S.T., Park, J. and Ram, S. (2004) Design Science in Information Systems Research. *MIS Quarterly*, **28**, 75-105. <https://doi.org/10.2307/25148625>
- [16] Hevner, A. and Chatterjee, S. (2010) Design Science Research in Information Systems. In: Hevner, A. and Chatterjee, S., Eds., *Design Research in Information Systems: Theory and Practice*, Springer, 9-22. https://doi.org/10.1007/978-1-4419-5653-8_2
- [17] Peffers, K., Tuunanen, T., Rothenberger, M.A. and Chatterjee, S. (2007) A Design Science Research Methodology for Information Systems Research. *Journal of Management Information Systems*, **24**, 45-77. <https://doi.org/10.2753/mis0742-1222240302>
- [18] Etoundi, R.A., Ndjodo, M.F., Ndedi, P.E. and Alo'o, G.A. (2010) Improving the Quality of Service Delivery in a Public Service Workflow Based on the Ant Theory: A Case Study in Cameroon. *The Electronic Journal of Information Systems in Developing Countries*, **41**, 1-15. <https://doi.org/10.1002/j.1681-4835.2010.tb00290.x>