CITIZEN IDENTIFICATION IN CONTEXT OF ELECTRONIC GOVERNANCE – THE CASE OF MOZAMBIQUE

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ABSTRACT

An efficient citizen identification system is fundamental in the context of the digital economy, both for the citizen and for the state as a public service provider and promoter of social justice, as there will be no justice without a correct identification of the actors, with the risk of penalizing the innocent and glorifying the ceremonious (Hoover, 1972).
The Mozambican Citizen Identification System (CIDS), based on the Information and Communications Technologies (ICTs) potentials, is being improved, therefore, the purpose of this article is to describe the current situation, its problems and forward some ideas to overcome the current problems, based on the Working Systems Theory (WST) (Alter, 2008).
Therefore, at the end of the article, recommendations are presented focused on the rationalization of the identification system, aiming at proposing a Conceptual Model that maximizes the ICT potentials, interoperable and working system.

KEYWORDS

Citizen, Citizen Identification, Interoperability, Electronic Governance, Working Systems

1. INTRODUCTION

Currently, most goods and services are made available using ICTs, through Electronic Governance (e-Gov), so, an indisputable identification of the main actor, the citizen, is essential. The CIDS are crucial tools for achieving Sustainable Development Goal (SDG), as stated in SDG#16.9 - to "provide legal identity for all, including birth registration" by 2030 and is a key enabler or contributor to many other SDG targets, such as financial and economic inclusion, social protection, healthcare and education for all, gender equality, child protection, agriculture, good governance, and safe and orderly migration (Dahan & Gelb, 2015). However, there are still more than one billion of people without proof of identity (Desai et al., 2018), so it is important that government and other players to take actions in CIDS and the appropriate conceptual model suitable for each reality is fundamental.

The Mozambican CIDS is comprised of various sub-systems that work as an "island", that is why it is worth conducting a study to propose a working Citizen Identification Conceptual Model in the context of e-Gov, which will respond to current and future challenges, because a well-structured identification system, conceived in a holistic approach, triggers the reduction of harmful aspects to the Public Administration, as it is the case of corruption and organized crime, which causes a lot of harm in many nations.

The research question is: *What is the appropriate Model of the Citizen Identification System (CIDS) for Mozambique?* This question directs the focus to the research of the conceptual aspects of Management Information Systems (MIS), contemplating the organizational, social and technological aspects, based on the work system Theory (Alter, 2013). To answer the research question, the study could be directed towards one of the following options: (a) developing several alternative models of CIDS, based on the best practices and/or based on principles theorists; (b) guide the study in an incremental development perspective, where the problems of the current Model are described and, based on the techniques of normalization of processes and the specificities of the Mozambican reality (case study), build the solution leading to the Proposed Model. Considering the object of the study and, given an analysis of the strengths and weaknesses of each one, the best option for the nature of the research matter is the second one, incremental development, as it allows a better understanding of the model to be developed, as it results from the cumulative resolution of the problems

identified using scientific abstraction according to the selected methodology, visualizing the benefits of the model, thus facilitating the involvement of stakeholders and the ownership of the proposed model. The research methodology adopted to answer the research question is Design Science Research (DSR), as it allows rigor and precision in the description of facts, advocates the design of artifacts, which responds to the need to propose a Conceptual Model of CIDS for Mozambique (Hevner et al., 2004).

The purpose of this article is to describe the current situation of the CIDS, its problems, and propose a working Conceptual Model under the WST perspective. That is why the article structure includes introduction, some concepts, methodological aspects, description of the current system, its problems, proposal of the model, and towards the end, the conclusions and recommendations.

2. FUNDAMENTAL CONCEPTS

After the introductory notes, and for a better framework of the study object of the article, as well as for the reader´s better understanding, this section conveys a concise bibliography review about some concepts addressed in the article.

2.1 Citizen Concept

Among several studies about citizenship concept, there is a common understanding that the concept remotes to classic antiquity and to the French revolution, in 1789, when there was an increase in citizenship awareness, which advocated the effective participation of an individual in a given community, according to the rights and obligations established in that community (Palazzo, 2021).

Since then, nations incorporated in their constitutions and/or ordinary laws, the concept of citizenship. As an example, the Republic of Mozambique Constitution, establishes that man and woman are equal before the law within the political, economic, social and cultural domain("Lei 1/2004," 2004).

Therefore, a citizen can be defined as a set of rights and obligations (or duties), which allows the citizen to engage in political, social, cultural and economic activities (Furtado, 2010). In the context of identification system, the citizen concept is broad-ranging, and defined in two perspectives, namely, (a) citizen as a simple, singular person and, (b) citizen as a singular, complex person(Maculuve & Amaral, 2022).

2.2 Citizen Identification

Identification is the consistent image of the subject about himself, formed by abilities and beliefs, which is built throughout life, being particularly active during adolescence (Santos, 2013).

By definition, identification is the action and effect of identifying and being identified, and it is related identity, which is the set of personal characteristics of a person or community in relation to other (Amicci, 2015). Several identification methods (name, photography, ferrite, tattoo, dental arch, mutilation, anthropometry, papilloscopy, among others) have been developed and adopted over time to ensure undisputed identity and the use of papilloscopy, commonly known as biometry, proved effective, and with the evolution of technology this identification method is being consolidated with usage of smart cards (Maculuve & Amaral, 2022).

2.3 Electronic Governance (e-Gov)

E-Gov is the process of modernizing the governance using virtues of the ICT, allowing: (a) production of better-quality information; (b) improved access to services (public and private); (c) increased opportunities in civic and democratic participation; (d) more effective and efficient and less costly and more accountable of Public Administration. Therefore, e-Gov can be defined as the use of ICTs to promote governmental efficiency in providing public goods and services less bureaucratized and more cantered in the citizen, both within government to government (G2G) and between government the economy (G2B) external relations and from the government to the citizen (G2C) (Gartner, 2000).

2.4 System Interoperability

In the knowledge economy era (where internet is the driving force in institutional business), information from several sources and using different technologies, requires dialogue between different systems in a timely, secure and comprehensive manner, without jeopardizing the desired results (Marques, 2021).

Interoperability can be defined as the information and services exchanged, in a coherent manner, between systems and allows for the replacement of used component or product in the interconnection point without compromising the functionality of the system (UK-Governament, 2000).

Interoperability comprises 3 dimensions, namely, (1) organizational; (2) semantics; and lastly (3) technology (ENAP, 2015). Interoperability require a paradigm shift from isolated to integrated systems based on business rules where several systems obey a set of business rules (procedures and actions) in order to yield harmonized results. Thus, in the case of integrated systems, each system belonging to the architecture must obey the rules on how to produce harmonized results, resulting from normalized processes within organizational environment. Figure 1 illustrates the process of paradigm shift.

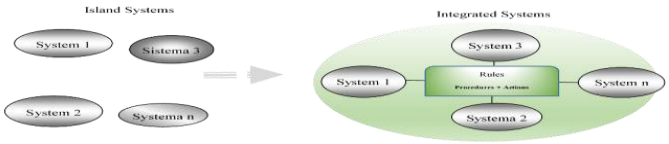

Figure 1. The movement from Island Systems to Integrated Systems

For an effective interoperability, it is important that (Mesquita & BRETAS, 2010). (a) Systems must be based in open standards; (2) services and components of reusable systems must be in the same architecture.

The Service Oriented Architecture interoperability (SOA) define a set of the best practices of the business processes. In figure 2 they are designated Rules Engine, where a set of procedures and actions (which will be common services being shared with different systems and/or with other organizational partners, within the scope of e-Gov) are normalized, aiming at a common understanding. Therefore, the interoperability service oriented architecture emphasizes business processes and the entities being served, and not the specific technology. Figure 2 illustrates the architecture oriented to services, pointing to the interconnection between different systems of a given organization and different networks from partners, who need to share a variety of business processes (services) within the scope of e-Gov.

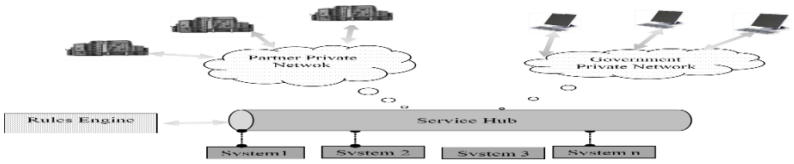

Figure 2. Service oriented architecture in the context of e-Gov

2.5 The Concept of a System

Considering that the article is devoted to the citizen identification system, it is relevant that the concept of systems is correctly understood, because, most of the times the term system is considered a technological solution or a software that operates in a given infrastructure (hardware).

The system can be defined as a group of people, procedures and technology, which, as a whole, can achieve a goal, in a socio-technological context, that is, the organizational, and social issues, as well as the surrounding environment must be considered in the definition of the system concept (Trauth et al., 2006). According to the WST perspective, the system is working if it provides services for which it was conceived for (Alter, 2008).

3. METHODOLOGICAL ASPECTS

The study aims to answer the following research question: *What is the appropriate Model of the Citizen Identification System for Mozambique?* Regarding the nature of the investigation, a combination of exploratory and descriptive was adopted (Diana, 2022), since the object of the study is CIDS for Mozambique, in a perspective of the evolution of the current model, combined with the nature of investigation, the research strategy adopted was a Case Study, because (Yin, 1994): (a) the study in question is knowledge obtained from experience and observation of facts relating to the functioning of the current CIDS model in Mozambique; (b) concerns about CIDS are a contemporary phenomenon for the world in general and for Mozambican society in particular; (c) the functional constraints of the Mozambican CIDS are a phenomenon that happens in real life in Mozambican society; (d) the scope is well delimited and stakeholders are also clearly identified.

Once the nature and research strategy had been defined, the Design Science Research (DSR) methodology was selected as appropriate to answer the research question, on the following grounds (Hevner et al., 2004): (a) it allows for rigor and precision in the description of the facts; (b) advocates the design of artefact's, which responds to the need to propose a Conceptual Model of CIDS for Mozambique; (c) ensures the involvement of people, organizations, processes and procedures. The problem that is intended to be solved with the Conceptual Model of CIDS, requires the creative and cyclical involvement of people, organizations, processes and procedures, within in an organizational environment.

Figure 3. summarize the methodological aspects for the present study, to answer the research question.

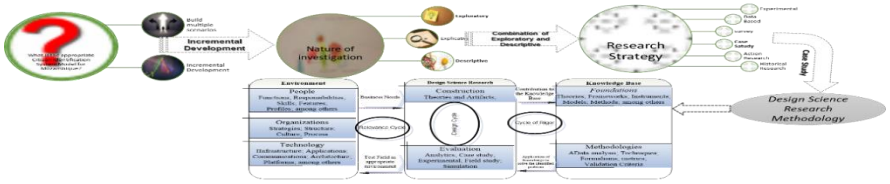

Figure 3. Summary of methodological aspects

Following the DSR methodology the research process carried out as follows: (a) Carry out a bibliographical review on the various concepts related to CIDS, which corresponds, in DSR methodology, the use of the Knowledge Base, for the resolution of the identified problem; (b) Collection of information in the various sources on CIDS both in Mozambique and in some countries, specially selected, this process, in DSR methodology, it fits into the component of studying the environment, where the people, organizations and technologies with the identified problem are. Therefore, the space where the phenomenon under study is observed; (c) In addition to collecting data from various documents that govern the Mozambican CIDS, the data collection strategy included interviews and discussions in focus groups.

The scope of study was limited to the CIDS subsystems that allow citizens to exercise or fulfil their constitutional rights and duties. In this line of action, the following entities were identified as main stakeholders (a) Ministry of Justice, which deals with the Birth Registration subsystem; (b) Ministries of the Interior, which manages the Civil Identification subsystem; (c) Ministry of National Defence, manager of the Military identification subsystem; (d) Technical Secretariat for Electoral Administration (STAE), responsible for managing the electoral identification subsystem; (e) National Institute of Terrestrial Transport (INATRO) manages the Driver identification subsystem, it should be noted that although this identification is not for the fulfilment of constitutional rights and duties, it only enables the citizen to driving motor vehicles, was included in the study due to its relevance in the CIDS, for Mozambican context; (f) Tax Authority of Mozambique, manages the fiscal identification subsystem; (g) Ministry of Health, manager of the Health identification subsystem; and, (h) National Institute of Social Security (INSS), is responsible for the Social Security subsystem.

Discussions in focus groups began, first with main stakeholders and then with other stakeholders. For this propose, a working group was formally created by the Minister of Science and Technologies involving all main stakeholders, with mandate and deadline (MCT, 2006). To support working group as well as to ensure that the assessment process included all those interested in the CIDS, an Advisers Group was created, consisting of high-level personalities who represented different institutions, namely, Judges, Member of parliament, top managers of various institutions, religious leaders, members of political parties, among others.

The outcome of the working group was adopted by Mozambican Government, such as: (a) adoption of Unique Citizen Identification Number (NUIC) ("Lei 12/2018," 2018); (b) new format of ID (BI)based on biometric which allow the citizen to access the BI on birth ("Decreto 11/2008," 2008); (c) new format of Passport based on biometric data ("Decreto 13/2008," 2008); among others.

Phenomenology, or rather, the experience and knowledge of the Mozambican reality was the object of analysis and consideration in the data collection process, which fits perfectly into the investigation strategy, Case Study (Yin, 1994).

4. IDENTIFICATION SYSTEM OF THE MOZAMBICAN CITIZEN, CURRENT SITUATION

This section presents a summary description of the current citizen identification system, aligned with the two perspectives of the citizen concept from the point of view of identification system.

4.1 The Citizen Identification: Singular Simple and Pure Person

The citizen identification in this perspective includes the following subsystems:

(a) Civil Registration, which deals with management of birth registration. From this subsystem, the citizen acquires the following documentation ("Lei 14/2020," 2020): (a) Birth Bulletin, assigned to the citizen at birth by the health authorities, sometimes, even before a name is given (innominate), resorting to the parents identification; (b) Birth Certificate, assigned to the citizen during born registration and it is the basis for acquiring subsequent identification papers, namely, the ID, Passport, among others; (c) Personal Ballot equally assigned during registration, which should have been used to register other events within the citizens' life cycle.

(b) Civil Identification, a subsystem that stores the data base about the national or naturalized (who acquire Mozambican nationality) citizens and the documents resulting from that subsystem are: (a) ID document (BI), assigned at birth, based on the birth registration documents (Bulletin, Certificate or Ballot) ("Decreto 11/2008," 2008); (b) ID for Foreign Residents (DIRE), assigned to foreign citizens with a residence permit ("Decreto 12/2008," 2008); and, (c) Passport (travel document), assigned to a citizen with the need to travel abroad, at any time, upon presentation of the birth registration documents or BI or DIRE ("Decreto 13/2008," 2008).

4.2 Citizen Identification: Singular Complex Person

The citizen identification in this perspective includes various subsystems, namely:

(a) Health, keeps citizens´ database from public hospital units, assigning them a Patient Identification Number (NID), in order to access the clinical process;

(b) Fiscal, keeps citizens´ database to ensure compliance with tax obligations, the essential of this subsystem is the assignment of the Unique Number Tax Identification (NUIT).

(c) Military, keeps database from national citizens above 18 years old, eligible for military service and for those who are already serving the military or are in the military career. The subsystem assigns two documents: (a) Military Ballot; and (b) Militar Identification Card

(d) Electoral, keeps database from citizens with electoral capacity, and the document in this subsystem is the voter card;

(e) Drivers´, keeps database from citizens enabled do drive automobile vehicles, and the document in this subsystem is the Driver's License.

(d) Social Security, keeps database for social security purpose (contributors e beneficiaries), resulting in the creation of two identifiers, namely: (1) Contributor Identification Number (NIC); e (2) Beneficiary Identification Number (NIB). Figure 4, summarize the Mozambican citizen identification system.

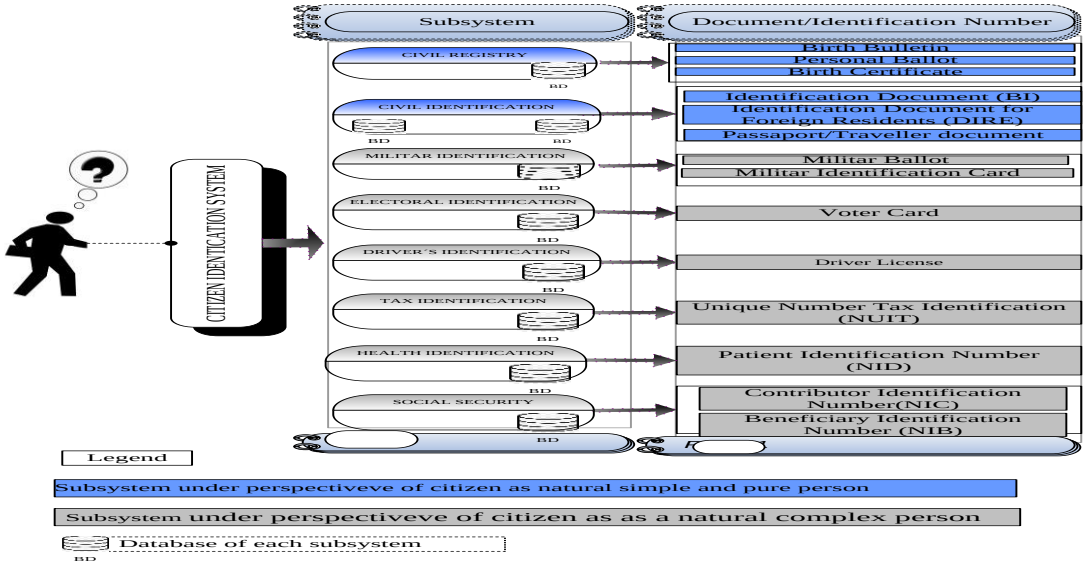

Figure 4. Macro vision of citizen identification system

As illustrated in figure 4, each subsystem maintains its processes and database, producing the respective documents in isolation, in a sort "island" system. There are cases of databases of the same subsystem, for example, Civil Identification subsystem, working in isolation way (one for BI issuance and another one for the issuance of passports (travel documents) and DIRE).

Table 1. Macro Vision of subsystems attributes

N/O	Documents (Subsystems)	Attributes																							
		Name	Father	Mother	Residential Address	Professional Address	Document Number	Birth Day	Marital status	Place of Birth	Tel	Fax	Email	Biometry	Nationality	Sex	Height	Expiry Date	Issuing Entity	Issuing Date	Place of Issue	Profession	Signature	photography
Subsystem under perspective of citizen as natural simple and pure person																									
1.	Birth bulletin	•	•	•	•	•	•	•	X	•	X	X	X	X	•	•	X	X	•	•	•	X	X	X
2.	Personal Ballot	•	•	•	•	•	•	•	X	•	X	X	X	X	•	•	X	X	•	•	•	X	X	X
3.	Birth certificate	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	X	X	•	•	•	•	X	X
Subsystem under perspective of citizen as natural complex person																									
4.	Identification Document	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
5.	Identification Document for Foreign Residents (DIRE)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	•	•	•	•	•
6.	Passport/Traveller Document	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	•	•	•	•	•
7.	Military Identification	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	•	•	•	•	•	•	•	•
8.	Electoral Identification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	•	•	•	•	•
9.	Drivers´ Identification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	•	•	•	•	•
10.	Tax Identification	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	X	•	•	•	•	•	X	X
11.	Health Identification	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	X	•	•	•	•	•	X	X
12.	Social Security Identification	•	•	•	•	•	•	•	•	•	•	•	•	X	•	•	X	•	•	•	•	•	•	•

Each one of the identification subsystem holds its own set of attributes. In Table 1, we present a macro vision of the different subsystems attributes. As shown in table 1, many attributes are repeated in several subsystems, some of which, in the case of biometric data (which is being collected in the civil identification

subsystem, drivers´ identification and electoral subsystem) have high maintenance costs. The subsystem does not have a common identifier (the attribute document number are not uniform).

According to the description of the current system, it is understood that the citizen life cycle in the identification system, as illustrated in figure 5, begins with a new birth registration or a request for nationality or permanent visa residency, going through several stages (qualities) that the citizen acquires throughout its life cycle, specifically, as a health system user, as a tax payer, as a voter, as a potential military, as a driver, as a social security tax payer and/or beneficiary. It also involves change in marital status, and many more, until the end of the citizen´s life cycle, the death, implemented in legal relations through issuance of the Death Certificate or when a foreign resident leaves permanently the country ("Lei 14/2020," 2020).

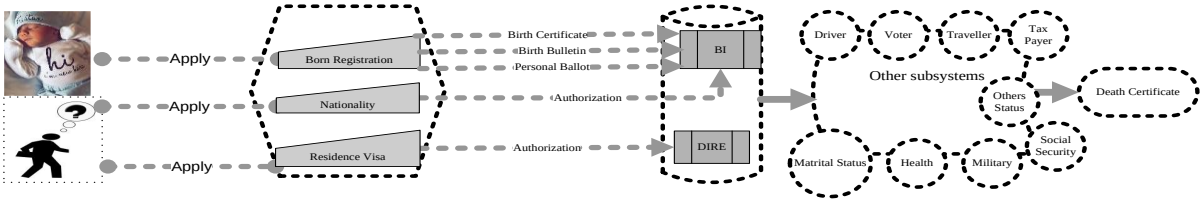

Figure 5. Simplified vision of the citizen life cycle under the identification point of view

A high-level analysis of the life cycle, figure 5, combined with the analysis of table 1, points to the need for simplification and rationalization of the civil registration subsystem, being able, for example, to eliminate some documents currently issued, namely, Birth Bulletin and Personal Ballot, as they have repeated information similar to that contained in the Registration Certificate. Therefore, out of the 3 it would be enough to keep one, the Registration Certificate.

5. CHALLENGES OF THE MOZAMBICAN IDENTIFICATION SYSTEM

After a brief exposure of the current system in the previous section, we bring up a critical analysis of the current system. The strategic use of ICTs is an opportunity for governments to focus their attention on the citizen, with the aim of providing them with goods and services in a responsive manner (available, timely and secure) according to their needs.

In legal terms, in Mozambique, the birth registration is mandatory and free of charge within 180 days after the citizen´s birth ("Lei 14/2020," 2020). However, many children, particularly in rural areas are not registered at birth, due to many reasons, mainly, (1) lack of parents awareness about the importance of the registration (they request it when the child is applying for school for the first time); (2) for some parents the name assignment is anticipated by traditional rites, which delays the registration; (3) The coverage of the infrastructure for providing the birth registration service is limited.

Legally, a Mozambican citizen has access do the BI at birth, upon presentation of birth registration evidence ("Decreto 11/2008," 2008). Nevertheless, this right is affected due to lack of registration at birth, with long lasting impact in their lives, mainly in rural areas, because it prevents them from exercising their rights, such as, access to educational system, among others.

Each institution collects, processes, stores and manages citizen´s data, without observing standardization principles, resulting in duplication of records within several subsystems, consequently, a positive identification of the citizen becomes complex and waste generators.

The exchange of information between different subsystems is manual, and the citizen acts like a facilitator of the process, providing information about changes on its registry along their life cycle, making it difficult and complex the development of new public services.

Lack of interoperability between identification subsystems, forces the citizen to go to numerous government institutions to request for identification documents, prompting high levels of bureaucracy and high cost for the citizen and the state.

Each institution, which manages citizen´s identification system, spends many resources (human, material and financial) to maintain common citizen data, a situation that can be avoided if there was interoperability.

Majority of the documents generates form the identification subsystems lack common and unique identifier of the citizen. In an incipient phase, the BI number is being included in the documents of other subsystems such as Passport, Voter Card and Driver's License, but this practice is still not producing the desired effects

because the processes of these subsystems are not standardized and do not use the BI number as a systems common “key” (Information system primary key).

Most of the systems do not include biometric data, putting at stake the principle of undisputable identity.

The registration content and attributes ‘structure is variable, because there are no standards to define formats and/or structures of the identification system (example: name format, date of birth format, among others).

The current situation regarding dispersed management of citizen identification highlights the insecurity of the current documentary file about the citizen´s data, placing the country in an inevitable challenge of re-thinking and re-structuring, at all levels, the citizen´s identification system.

In view of this reality, it is essential to carry out a study that culminates in the proposal of a Conceptual Model of the CIDS suited to the Mozambican reality, with a view to enabling the Mozambican citizen for the digital economy.

6. MODEL PROPOSAL

The current trend for the citizen´s identification systems is moving from traditional way to electronic (e-ID) and usage of smart cards, thus, allowing portability of necessary information for the citizen´s undisputable identification, as well as the accessibility to digital services.

According to figure 5, the life cycle of the citizen, evidence the need to rationalize the civil registration subsystem and a correct interconnection with other systems, to ensure citizen´s data integrity throughout its life cycle, in a perspective of a working system(Alter, 2008).

The development of CIDS must be in line with 10 principles, namely (The-World-Bank-Group, 2021): (a) Principle #1- ensure universal access for citizens and free from discrimination; (b) Principle #2-Remove Barrier, direct and indirect costs, information asymmetry, gaps in access to technology and inclusion at birth must never constitute a barrier to citizens accessing, using and obtaining legal identity; (c) Principle #3-Establish a trusted identity (unique, secure and accurate); (d) Principle #4-Create a responsive and interoperable platform; (e) Principle #5-use open standards to avoid dependence on technologies and suppliers; (f) Principle #6-protect privacy and personal autonomy in system design; (g) Principle #7-ensure financial and operational sustainability; (h) Principle #8-protect personal data, maintain cybersecurity and protect citizens' rights through a comprehensive legal and regulatory framework; (i) Principle #9-establish clear institutional mandates and accountability procedures; (j) Principle #10-ensure legality and trust through independent oversight and grievance resolution mechanisms.

Given the current reality and taking into account current and future challenges, as well as trends in identification systems, a Conceptual Model is proposed as systematized in figure 6.

The proposed Model take in consideration the following assumptions: (1) effective adoption of the concept of the Single Citizen Identification Number (NUIC), as a “unique key” for all citizen identification subsystems ("Law 12/2018, of 4 December," 2018); (2) reduce the Mozambican CIDS to 3 subsystems, with harmonized and interoperable processes based on the NUIC, namely: (a) Civil Registry; (b) Civil Identification; and, (c) Driver Identification; (3) the citizen identification system would be limited to issuing 4 types of documents, namely: (a) BI; (b) DIRE; (c) Passport (Travel Document); and, (d) Driver's License; and, (4) the Registry Certificate would be maintained, as an intermediate document for the certification and/or updating of citizen registration events in their life cycle; (5) Adhere to at least 8 out of the 10 principles, specifically principles 1, 2, 3, 4, 6, 7, 8 and 9 (The-World-Bank-Group, 2021).

Accordingly, to the proposed Model, the current identification subsystems of the military, electoral, fiscal, health and social security, that allow the citizen to exercise its constitutional rights and duties, will no longer be identification subsystems and become processes by which the citizen participates, and are interconnected with the CIDS through NUIC, with the BI as a core document and in a consolidated stage, it could be clumped, for example, the driver´s license and the BI.

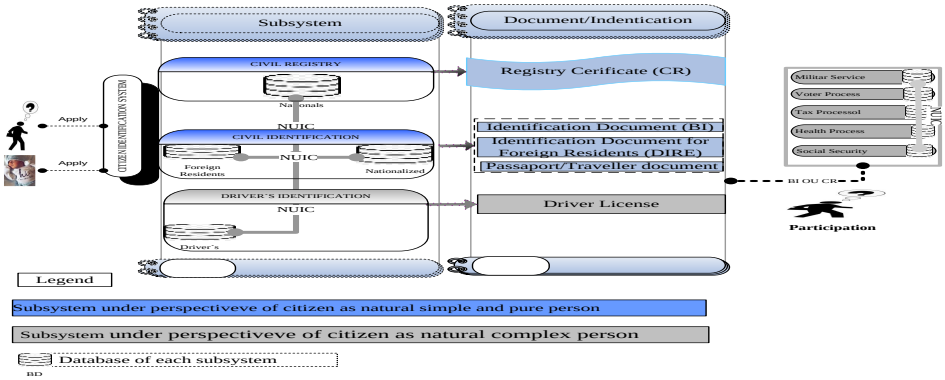

Figure 6. High level proposed conceptual model

7. CONCLUSIONS AND RECOMMENDATIONS

The trend of CIDS is moving to electronic identification system(e-ID), however is crucial to have traditional process well-structured based on appropriate and suitable conceptual model according to the WST(Alter, 2013).

The e-Gov strategy aims to respond to the following challenges: (1) Focus on the citizen; (2) Transparency; (4) Accountability; and, (4) e-participation. However, with an inefficient identification system, as is the case under study, it is difficult to achieve this goal.

There is an effort by the government of Mozambique to implement e-Gov, and since the late 1990s a facilitating legal framework has been developed. However, some challenges still persist, namely: (a) The lack of sustainable ICT infrastructure; (b) higher population concentration in rural areas with limited access to internet and about 39% of the rural population is illiterate, which can compromise the maximization of the virtues of ICT (INE, 2020); (c) the inefficient institutional coordination does not allow synergies in the implementation of e-Gov projects; (d) the inefficient CIDS, among others.

Inefficient CIDS makes public administration complex and it poses problems in two dimensions, namely: (1) to the citizen, it imposes avoidable costs; (2) to the state, it does not allow the existence of responsive information about the citizen identification to assist needs for administrative action.

The current system does not allow interoperability. Therefore, it is not a working system, as it does not produce the results for which it was efficiently designed (Alter, 2008).

The high-level analysis of the current system reveals the need for restructuring and rationalization, which is why the study leading to the implementation of the proposed Conceptual Model is recommended. The proposed model will allow citizens to enjoy the virtues of ICTs and access to digital services and for the state, it will allow the availability of responsive information for the various needs of administrative action.

The article describes the current situation of the Mozambican CIDS, its problems and proposes a working Conceptual Model, with a view to answering the research question, *What is the appropriate Model of the Citizen Identification System for Mozambique?* The Appropriate Conceptual Model for Mozambique or countries with similar socio-economic characteristics is the Model based on the following assumptions: (a) based on the NUIC; (b) that is compliant with at least 8 out of the 10 principles established by the World Bank; (c) that responds to current and future generations' challenges with regard to CIDS; (d) that allows citizens to participate in the digital economy; (e) Interoperable and rationalized as proposed on section 6; among others.

Finally, in addition to the need to detail the proposed Conceptual Model, it seems to us to be justifiable and recommendable a future study on the matter in two lines of action, with a view to: (a) Creating an institutional basis for management, maintenance and technical control-legal of the citizen identification system, in a holistic view, based on a sustainable architecture, which would assume the role of coordinator of the proposed model; (b) assess the need to review some legislation to adapt to the model.

The study becomes relevant because a citizen identification system based on modern architecture that responds to the present and future challenges contributes to the public administration modernization, as well as to the democratization and promotion of social justice(Hoover, 1972).

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