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National Security, Online Crime Control and the Need for Harmonized Database in Nigeria

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ABSTRACT: The need to have a formidable and reliable harmonized national database is very crucial due to vulnerabilities our different databases have been subjected to. Centralized database will reduce to the barest minimum some criminal vices in our society. There is need to improve our national identification coverage to curb financial theft, support improved anti-money laundering and combating terrorism financing, and proliferation measures. This country needs a central database that will contain the necessary information about Nigerians and Nigeria, not multiple collections by many agencies for unknown or even untenable purposes. This article aims to create harmonized database that is based on emerging technology for improved and reliable data storage in Nigeria. The article seeks to create a central database for digital identification across designated entities. It identifies the key stakeholders using the databases, discusses key challenges, especially relating to the inclusivity and privacy and data protection concerns of individuals as well as the organizations and governments. We conclude by giving appropriate recommendations to the stakeholders.

I. INTRODUCTION

There is currently no harmonized national identity database and no system of National Identity Management which efficiently links public and private sector identity schemes in Nigeria. While the financial services sector has been most proactive in the deployment of identification schemes for delivery of its services, the schemes have differed from institution to institution within the sector [2]. The result has been the creation of several different identification schemes and databases leading to the duplication of an individual's identity data by the various institutions offering services to that user. Government agencies also hold a number of databases with no viable integration of access or interoperability to enhance the delivery of services within these government institutions [2]. This is despite the fact that some of these institutions have introduced smart card technology into their schemes. A reliable national system for verification and secure authentication of an individual's identity has thus not been established. National Identity Management Commission (NIMC) Act, 2007 Act No. 23; An Act to provide for the establishment of a National Identity Database; has been setup by the Govt. of Nigeria with a mandate to issue a Unique National Identification Number (NIN) to all Nigerians and long term residents in the country [3] [6]. NIMC proposes to create a platform to first collect the identity details and then perform authentication that can be used by several government and commercial service providers [13]. A key requirement of NIMC's system is to eliminate duplicate identity. NIMC has selected biometrics feature set as the primary method to check for duplicate identity [6]. For government and commercial providers to authenticate the identity at the time of service delivery, it is necessary that the biometric information capture and transmission are standardized across all the partners and users of the NIMC's system, taking cognizance of the appropriate biometrics parameters to achieve the NIMC's mandate [1]. This encompasses best practices, expected accuracy, interoperability, conformity and performance in biometrics standards [12].

Nigeria's lack of good and systematic database has, in no small measure, affected effective national strategic planning and management of migration and crime control. We therefore, advocate for the creation of a single centralized database with the view of having effective and efficient central data management system for the country [4]. There is an urgent need to pass a legislation to support the harmonization of existing disaggregated databases and creation of a central national database for the country.

II. STATEMENT OF THE PROBLEM

A database is a civilized way of keeping digitalized records about a place, thing or people. However, a national database is a similar data convergence of a nation or community people who share a common language, culture, ethnicity, descent or history [7]. Data has been regarded as an important tool for development. There can be no development without data.



Database is data trust. Therefore, data must have basis and kept in an organized manner [8]. The absence of a unified database in Nigeria had given room for multiple registrations of voters, use of SIM cards for criminal activities and other related vices. Also the Federal Government's decision to harmonize the highly proliferated biometric-based identity systems in the country is long overdue. Virtually all federal agencies and private sector operators have their respective biometric data of citizens, which has led to multiple databases and as a result leads to waste of resources and manpower. Therefore, this study seeks to propose a model for the design, implementation, usage and maintenance of Nigerian National Central Database, in order to enhance the performance of the National Identity Card.

III. SIGNIFICANCE OF THE STUDY

This national database when implemented will go a long way in providing accurate information concerning any social vice or eliminate guess work, and can automatically identify a criminal, alien, intruder etc. This study will emphasize the need for adoption of biometric system of personal information gathering. It will use this individual biometric such as finger print, Irish scan and other forms of biometric to solve security issues.

IV. SCOPE OF THE STUDY

This article is written in order to sensitize stakeholders of the needs to have harmonized national database to achieve national security. The implementation of such database may is hereby recommended for the Nigerian government.

V. AIM AND OBJECTIVES

The aim is to create a formidable and reliable centralized national database for Nigerian government. The objectives of this work are to provide:

- A unified national database that can handle and maintain personal information of the Nigeria populace [5].
- A database that will have the ability to store information regarding people's identity, biometric, activities which include communications movement and social involvement [9].
- The national database system that can provide sufficient information pertaining an individual's activity or for group of persons during query.
- A secured database that supports levels of different user's access with defined privilege.
- A national database that is reliable and efficient
- A comprehensive database that is rugged enough to avoid redundancy.
- A database that has confidentiality, integrity and availability.

VI. LITERATURE REVIEW

If the national aspiration is to build a world class infrastructure, on the path of economic rejuvenation, renewal and growth, equitable distribution of income, educational development, social security, political stability, full employment, price stability or to maintain balance of payment equilibrium, Nigeria must embrace an honest census and credible information system [16]. A national database is an organized data or numerical environment where every citizen of a nation and the immigrants are uniquely identified and possesses a strong national identity. National database may be population, identity, security, electorate, group or association's classified information or data of national interest. In Nigeria, there are critical national security challenges combined with how to fight corruption. Central national database like any other project aims at solving problems and it is capable of solving these challenges [10].

The Committee on Harmonization of National Identity Cards was set up by former President Obasanjo to review existing ID card projects and recommend ways of integrating them into a single multi-application card [16]. The Committee's findings and recommendations are expected to complement the efforts of the Committee on Consumer Credit, which was set-up to look at ways of establishing consumer credit system and infrastructure in Nigeria. The Consumer Credit Committee had earlier identified the absence of a unified and verifiable identity database as a negating factor to the development of consumer credit system in the country [16].

The main objective of this research is to create a holistic overhaul mechanism for anti-corruption, national identity and a central coordination of national security that will ensure considerably security measure against corruption and national identification [17]. However, the proposed database provides the following objectives: "to create a holistic overhaul

mechanism and procedure to solving insecurity issues; create a central coordination of national security; create a forum for security information sharing, exchange of ideas and collaborative efforts among the allied security operative in Nigeria; fight corruption in government and promote attitudinal change of residents towards public resources and utility; create and assign national security number to all Nigerians at home and abroad including the immigrants; monitor all neighbouring borders and port-of-entry security; provide data knowledge for driven the economy and development; eradicate manipulations of government resources by some unscrupulous civil service officers; generates employment; reduce cost of running government; set standards for cyber law; cashless banking protection and security policies”[11] [18] critically examined numerous database models and how Entity-Relationship model is used to create a large central database[35]. Therefore, they modified and extended Entity Relationship data model to include utility (i.e. Public Service) and used it as a method for achieving the data capturing and transaction in a typical central national database and attention was drawn to data retrieval, storage, modification efficiency and relationships are based on one-to-many and many-to-many as occasion demand in the use of Relational data model methodology in the central national database [35].

Figure one below indicates that in order to create a successful national central database, there is a need for data gathering. All relevant data about each citizen will be recorded in the database, such as bio- data (first name, middle name, last name, date of birth, place of birth, address, phone number, next of kin etc.) and biometric information (finger print, palm print, iris, facial image, DNA etc.).

Figure two shows the proposed Nigerian National Central Database System Architecture, the architecture of the system implies that the national database management system after proper record of individual will generate a unique national identification number which will distinguish individual from each other [26][25]. The architecture is designed in such a way that each parastatal and other government agencies can have access to any information about individual based on level of authorization. Updating of record by any government agency, ministry or parastatal will also be based on level of authorization [24].

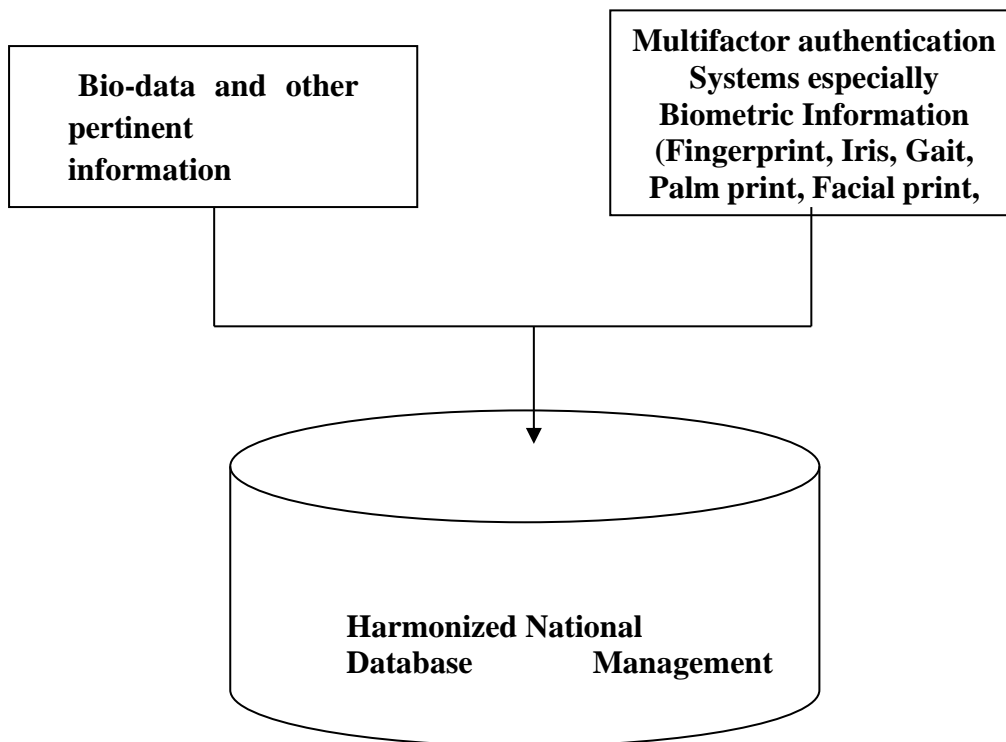


Figure 1.0 : The proposed Framework

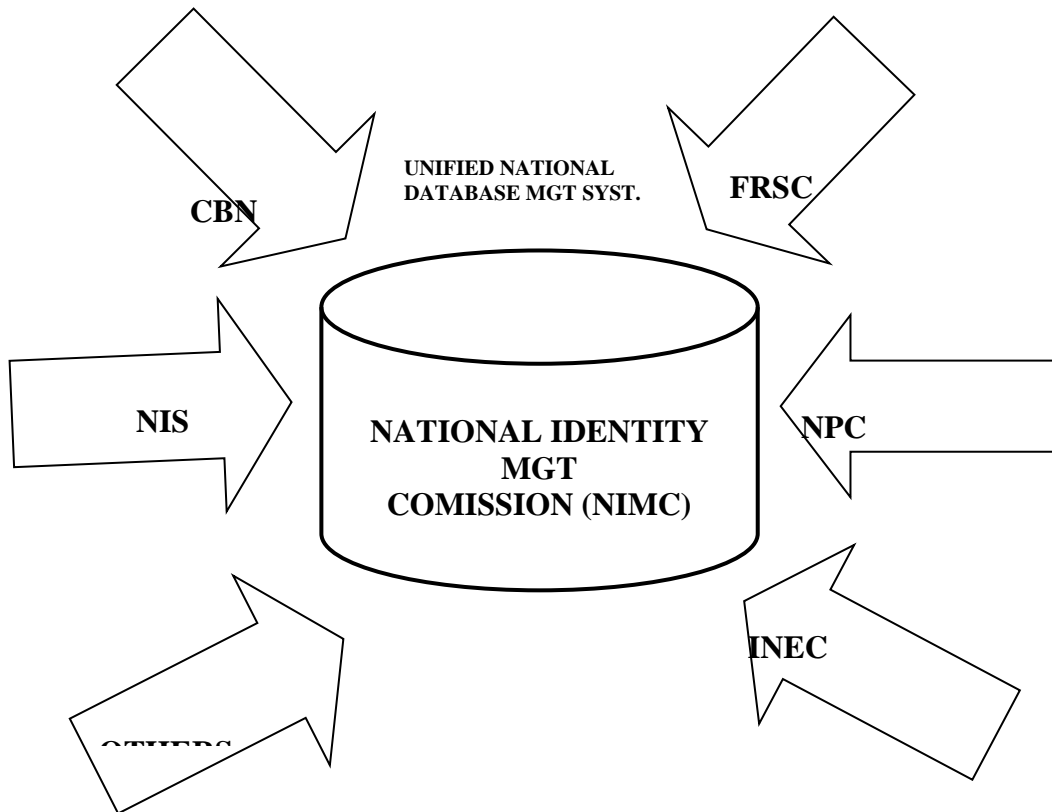


Figure 2.0: The proposed Nigerian National Central Database System Architecture

KEY:

CBN:- Central Bank of Nigeria (Opening of bank accounts etc)

INEC:- Independent National Electoral Commission (Voters Card etc.)

NPC:- National Population Commission (Birth & Death Certificates etc.)

FRSC:- Federal Road State Commission (Drivers Licence etc)

NIS:- Nigerian Immigration Service (International passports etc)

OTHERS:- Hospital Management Board, Federal Inland Revenue Services, Nigerian Police Force, National Universities Commission etc.

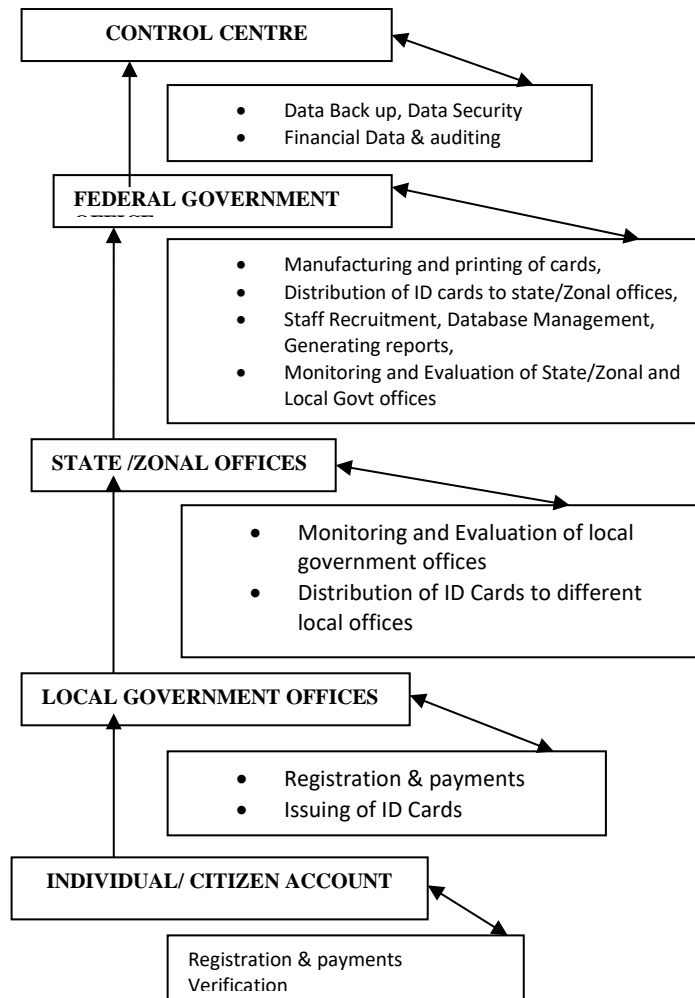


Figure 3.0: The Administrative Structure of the Harmonized National Database

Individual/Citizen Account: This is an administration portal where each able citizen can automatically register their relevant information and at the same time retrieve or verify their information. This will enable each citizen to be able to know the status of his/her citizenship and also know the period of expiration of each added services (such as: driving license, international passport, Health insurance etc.).

Local Government Offices (LGO): This arm of the administrative structure is the lowest in hierarchy and will be responsible for registration of individual. This also implies that the local offices in various states of the federation will be in charge of registration of citizens within the local government area, they will also be responsible for reception of payment receipts and issuing of identity cards.

State/Zonal Offices: This arm of administration is senior in hierarchy to the LGO, and will be responsible for monitoring and evaluation of Local Government offices within their jurisdiction. Also, they will be in charge of distribution of ID Cards to various local government offices within their jurisdiction.

Federal Government Office (FGO): This arm of administration is senior in hierarchy to the State/Zonal offices, and will be responsible for manufacturing and printing of ID Cards, distribution of ID Cards to various State/Zonal offices,

service commissions and staff recruitments, database management, generating national reports, monitoring and evaluation of state/zonal and local government offices.

Control Centre: This arm of administration is senior in hierarchy to the FGO, and will be responsible for data backup and security, data and financial auditing.

VII. NATIONAL DATABASE

A national database can be defined as an organized data or numerical environment where every citizen of a nation and the immigrants are uniquely identified and possess a strong national virtual identity. National database is a dynamic and intelligent data records system. It contains detailed particulars of classified information, resident citizen, the Diaspora and the foreigners including their biometrics and passport photograph [5][6]. Usually, it is adequately prepared on relational database conceptuality and expansive data administration and management. National database is a centralized system, typically multiuser and distributed information systems based on hypertext with web interfaces to the central database. There is no way we can implement a database without a particular data concept. Data has been described as pertinent tools for development [5]. Data are collected, captured, processed and produced as a finished output. Data may be valuable, quality or quantity. Data is life; it is the property of development.

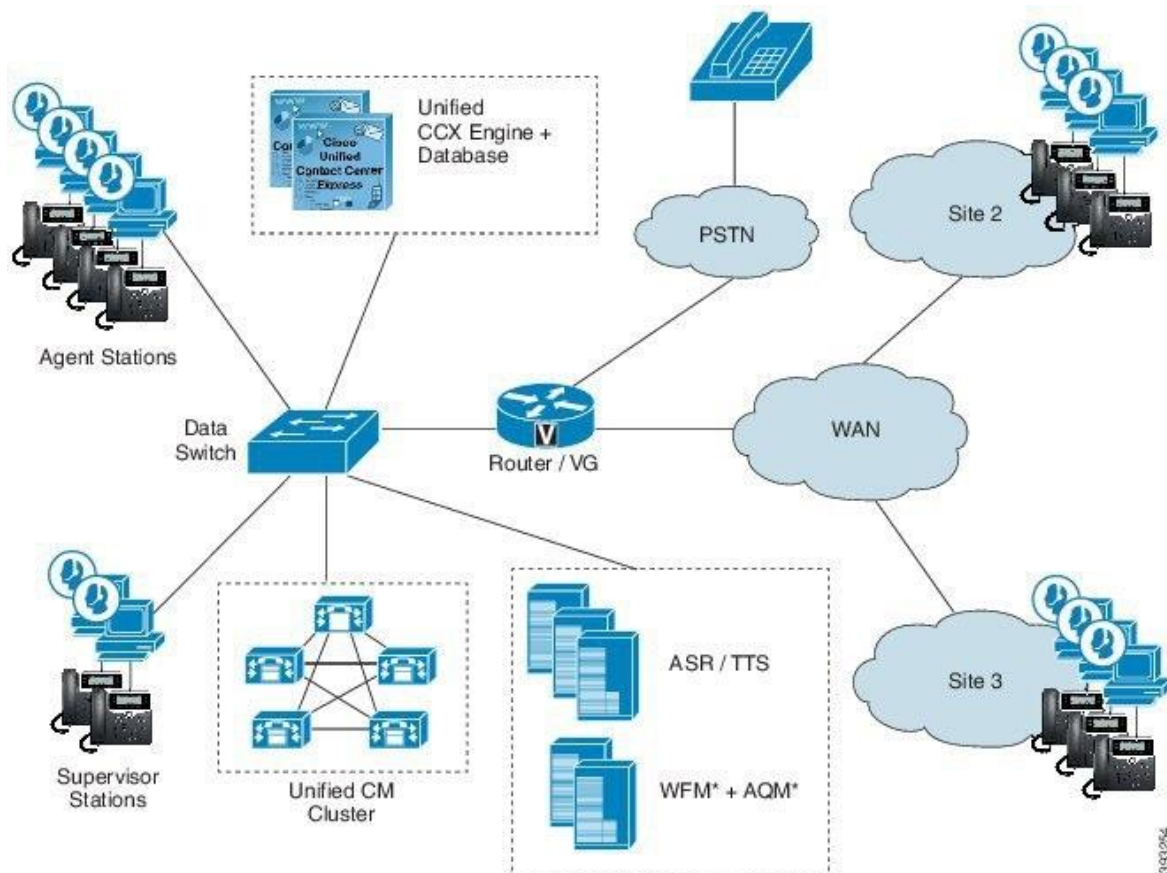


Figure 4.0 Prototype of a Centralized Database



VIII. ISSUES FACING NIGERIA FOR SCATTERED DATABASE

Nigeria lacks a real database because of the issue of duplicity; it is therefore difficult to say that every citizen of Nigeria is accounted for by any single database. Some of the identified main issues are:

- a) The inability of Nigeria to secure a central database system continues to be a mounting challenge that the nation has been facing from independence. As such, a lot of the potential benefits that come from such a system continue to elude Nigeria and Nigerians in general; [23]
- b) Presently, Nigeria is critically facing security challenges all because people are not uniquely identified and tagged. This situation has led to insecurity in Nigeria with different trends and dimensions from one geopolitical zone to the other;
- c) One cannot help to see how there is duplicity of the same data by almost all agencies that require them thereby wasting the scarce national resources. The same data is collected by several organizations when they can actually share from a common database; [24]
- d) Excesses and uncontrolled issuance of national documents by fraudsters and corrupt government officials because of lack of a system that can prevent double identities, multiple applications and abuse of the services. Nigeria is too complex and as such requires the best system for accuracy. Developed countries use both iris and facial recognition database in crime detection;
- e) Illegal immigration and ineffective control of border crime: Nigeria is badly in need of citizenship identification, recognition and accountability. Nigeria’s porous borders, corrupt police, customs and immigration officials mean we cannot control migration and crime effectively; [23]
- f) Countless amounts of monies have been spent on planning and consultation only for these plans to become useless and waste. The government pays civil and private organizations to plan the nation’s future but due to lack of simple priorities grasp and misappropriation of expertise means people are working aimlessly to achieve nothing [22].
- g) It is fair to say despite government claims to have goals and objectives it is not hard to notice that corruption, mismanagement, banditry, kidnapping and inadequate documentation and certification of birth/death continue to be Nigeria’s biggest enemies.
- h) A lack of credible census figures which makes public funds not being managed prudently and not dispersed according to demography. In essence, a lack of near accurate count will mean poor allocation and planning of public resources [22]. Whereas, a biometric database of citizen is automatically a census exercise and one that will be around for a long time.

IX. DATABASE DUPLICITY

The four most important databases in Nigeria are NIN, INEC, FRSC driver’s license and the National Immigration Service (NIS).

Table 1.0

S/N	Database	Description of the Content	Limitations
1	Independent National Electoral Commission(INEC)	INEC is the body that conducts elections in Nigeria. They have the responsibility to register eligible voters(Citizensof18years and above). And due to this reason the commission created a database to store all of these information of voters in its voters register (voter’s database). Entries in this register include these items basically; state of origin, Local government of origin, home town, address, occupation, gender, finger print, and facial recognition. This database is unique in the sense that it has two basic security fields, the finger print and facial recognition. This makes it a very implicit database and would have been able to serve as a centralized database but unfortunately it has some limitations.	It is only for registered voters who are 18 years and above. Not everyone registers to be a voter even though they are eligible for various obvious reasons; religious and otherwise, secondly the database is not comprehensive as it does not cover the whole population so those under the eligibility age are not included. Another flaw in this database is that it could be two individuals, that is, a particular entry could have one person’s fingerprint and another person’s face taken By the facial recognition software.

2	Federal Road Safety Corps National Driver's Licence (FRSC)	The second database is that operated by the FRSC, they are responsible for issuance of driving license for those who are either 18 years or above and have been tested in their driving abilities.	This again is limited while every person 18 years or above could be captured by the INEC database FRSC captures only those who can drive and are 18 years and above. This database is limited as we find out that the number of persons on its register cannot be compared to that of those on INEC register. The entries also are the same With that of INEC.
3	National Immigration Service (NIS)-The Nigeria International Passport	Perhaps this is Nigeria's most secured and effective database because it provides its citizens with their international passport. It uses both facial recognition and fingerprint for all fingers and signature. This is the most effective as it has no age limit that means everyone can be registered on it.	Unfortunately, International Passport is also limited until a citizen has the intention of going outside the country they do not have need for it and it is not required for any form of access within the country.
4	National Identification Number (NIN) by National Identity Management Commission (NIMC)	The National Identification Number (NIN) is a set of numbers assigned to an individual upon successful enrolment. Enrolment consists of the recording of an individual's demographic data and capture of the ten (10) fingerprints, head-to-shoulder facial picture and digital signature.	Though, all citizens and legal residents in Nigeria, from age zero (birth) and above are eligible to enroll for their NINs, however, registration is highly difficult and poorly publicized. Therefore, people have not

Courtesy:- [NILDS – National Institute for Legislative & Democratic Studies](#) [26]

X. PROCESS FOR THE HARMONIZATION AMONG DATABASES IN NIGERIA

The aim of this research is to advocate for the creation of a single centralized database with a view to having effective and efficient central data management system for the country. The creation of such a central data management will not only be useful for economic and strategic planning, but also for intelligence gathering, crime control, counter-insurgency and terrorism, anti-corruption campaign, amongst others [13]. Achieving the goal of creating a central national database through the under-listed process may be considered: There is a need to pass legislation to support the creation of a central national database for the country, upgrade of all existing disaggregated databases warehoused with such agencies such as the NIMC, FRSC drivers licence information, Nigeria Immigration Service, National Population Commission (NPC) and INEC [17][13]. These Agencies then create a harmonized platform for warehousing and all available national databases to be managed by NIMC such that all relevant agencies can share from that platform. There should be upgrade of NIMC through its NIN project and give it harmonization mandate from which all other relevant agencies can take a pool of data they need [33].

XI. AREAS FOR LEGISLATIVE CONSIDERATION TOWARDS HARMONIZATION PROCESS

Harmonization of our various databases would be a plus to the nation and upscale the country's availability and access to data which can be used for national economic planning, crime control, identity management, among others. It will also help in streamlining the existing information agencies into one central national database for accuracy and reliability [15]. The various agencies such as FRSC, NIS, NPC, and NCC who are currently compiling biometric information will continue to do so in order to feed the central database for purposes of harmonization. The following recommendation is hereby proffered: [20]

1. National Assembly may pass an amendment Bill to the National Identity Management Commission (NIMC) the central national integrated database for the country.
2. The Bill should streamline and merge the NPC and NIMC into one commission;



3. The Bill may give National Identification Management Scheme (NIMS) the power to create, coordinate and manage the central national database. This powers should be without prejudice to the powers of other agencies such as NIS, FRSC, NCC, INEC etc., to generate their data which should be fed into the central national database; [15]
4. The Bill may provide a clause to empower other agency that requires access to the database to have their own interface that links them to the central database and gives them unique access to that entry that they require and only collect the extra information that is not given in that central database; and
5. The Bill may also provide the collection of such type of data that would be necessary for crime control, economic intelligence and terrorism [16].

XII. ADVANTAGES OF THE PROPOSED SYSTEM

- **It will eradicate loss of documents:** Implementation of this system will completely wipe out loss of document. Informally, several cases of loss of documents have been reported and this is as a result of lack of organization by those handling the documents. With this automation, documents can be attached with an electronic mail and can be printed to hard copy. Moreover, tracing of documents will be easier with this automation system [17].
- **It will encourage social interaction:** This system will bridge communication gap between staff members and the management and also ensure effective and efficient feedback mechanism.
- **It will ensure privacy:** With this proposed system, privacy of citizen is sure since they will have access to their personal accounts without third party interference.
- **Processing will be faster:** This system will ensure effective processing, this is because each staff member can communicate with any office at any point in time and it will reduce passing memo through offices; all the sender needs to do is to send copies of the same memo to the required offices [18].
- **Citizens will be more computer literate:** This system will allow staff members and general citizens to be more computer literate as the system will ensure more familiarity with computer and other ICT gadgets.
- **Complete eradication of data multiplication:** Implementation of the proposed system will allow every government parastatal to have access to required information within a single database, which will disallow any parastatal to have database of their own.
- **Curbing fraud and impersonation:** The proposed system will drastically reduce internet and banking fraud, impersonation and examination malpractices.
- **Loss of IDs:** This system will reduce loss of identity cards as there will be no need for carrying multiple identification cards. And in case of loss of the unified identity card, citizens will not have to worry as new ones can easily be issued without stress [19].

XIII. DISADVANTAGES OF THE PROPOSED SYSTEM

- The cost of implementation and maintenance is high.
- It will require trainings or workshops for the staff members on the principles of operation
- Collapse of the control centre may lead to national disaster.

XIV. CONCLUSION

The brief strongly advocates for the creation of a central national integrated database, instead of the existing multiple but disparate databases created by different agencies. This study proposed a model for the design, implementation, usage and maintenance of a Harmonized National Central Database, so as to enhance the initialization and performance of a National Identity Card. The study also establishes that the proposed Harmonized National Central Database will drastically eradicate loss of document at different government parastatals, it will ensure privacy and as well curb fraud and impersonation, likewise, make the processing of various ID faster than the orthodox techniques. It is important to state that the proposed central integrated database could be efficiently deployed for national strategic planning, crime control, and policy implementation. Therefore, to build a reliable integrated database in Nigeria, we conclude that all government agencies that deal with collection of data need to be coordinated under the NIMC to create a national



integrated database. The National Assembly should expedite action in passing a Bill to give the harmonization mandate to NIMC through its NIN project and allow other relevant agencies to share a pool of data they need from that platform.

REFERENCES

- [1] Anderson, L., Biscaye, P., Coney, S., Ho, E., Hutchinson, B., Neidhardt, M. and Reynolds, T. (2016), "Digital financial services: Review of National Identity programs", available at: www.itu.int/en/ITU/focusgroups/dfs/Documents/09_2016/Review%20of%20National%20Identity%20Programs.pdf (accessed 18 August, 2023).
- [2] Ayamba, I.A. and Ekanem, O. (2016), "National identity management in Nigeria: policy dimensions and implementation", *International Journal of Humanities and Social Science Studies*, Vol. 3 No. 1, p. 280.
- [3] Ayang, M. (2021), "Digital driver's license for Nigerians requires biometrics-backed NIN optional digital credential coming soon", 26 January, available at: www.biometricupdate.com/202101/digitaldrivers-license-for-nigerians-requires-biometrics-backed-nin (accessed 19 November 2023).
- [4] Babalola, O. (2021), "Nigeria's data protection legal and institutional model: an overview", *International Data Privacy Law*, Vol. 12 No. 1, p. 5, available at: <https://academic.oup.com/idpl/advance-article/doi/10.1093/idpl/ipab023/6403926> (accessed 12 October, 2023).
- [5] Baker, S. (2020), "Digital ID in Nigeria: a case study", available at: [https://digitalid.theengineroom.org/assets/pdfs/\[English\]%20Nigeria%20Case%20Study%20-%20DigitalID%20-%20The%20Engine%20Room.pdf](https://digitalid.theengineroom.org/assets/pdfs/[English]%20Nigeria%20Case%20Study%20-%20DigitalID%20-%20The%20Engine%20Room.pdf) (accessed 16 November, 2023).
- [6] Baker, S. and Rahman, Z. (2020), "Understanding the lived effects of digital ID: a multi-country study", p. 20, available at: www.theengineroom.org/understanding-the-lived-effects-of-digital-id-systems/ (accessed 16 July 2021).
- [7] Federal Road Safety Commission (FRSC) (2022c), "What we do", available at: <https://frsc.gov.ng/whatwe-do/> (accessed 14 January 2024).
- [8] Financial Action Task Force (2020), "Digital identity", March 48, available at: www.fatf-gafi.org/media/fatf/documents/recommendations/Guidance-on-Digital-Identity.pdf (accessed 20 October 2021).
- [9] Financial integrity in Nigeria Bester, H., Chamberlain, D., de Koker, L., Hougaard, C., Short, R., Smith, A. and Walker, R. (2008), "Implementing FATF standards in developing countries and financial inclusion: findings and guidelines", p. 4, available at: https://cenfri.org/wp-content/uploads/2009/12/Implementing-FATF-standards-in-developing-countries-and-financial-inclusion-executive-summary_Genesis_May-2008.pdf (accessed 20 October 2023).
- [10] Beynon-Davies, P. (2011), "The UK national identity card", *Journal of Information Technology Teaching Cases*, Vol. 1 No. 1, pp. 12-21.
- [11] Bruce, A.B. (2010), "Identity fever (2009-2010)", *Southern Cross University Law Review*, Vol. 13, p. 109.
- [12] Central Bank of Nigeria (CBN) (2021), "Regulatory framework for mobile money services in Nigeria", p. 23, available at: www.cbn.gov.ng/Out/2021/CCD/Framework%20and%20Guidelines%20on%20Mobile%20Money%20Services%20in%20Nigeria%20-%20July%202021.pdf (accessed 9 December 2023).
- [13] National Identification Management Commission (NIMC) (2017), "A strategic roadmap for developing digital identification in Nigeria", p. 3, available at: https://nimc.gov.ng/docs/reports/strategic_RoadmapDigitalID_Nigeria_May2018.pdf (accessed 10 October, 2023).
- [14] Central Bank of Nigeria (CBN) (2018), "National financial inclusion strategy (revised)", pp. 1-3, available at: www.cbn.gov.ng/out/2019/ccd/national%20financial%20inclusion%20strategy.pdf (accessed 16 September 2023).
- [15] Federal Ministry of Communications and Digital Economy (2021), "Revised national identity policy for sim card registration", 12, available at: www.ncc.gov.ng/documents/988-revised-nationalidentity-policy-for-sim-card-registration/file (accessed 20 October 2023).
- [16] Federal Road Safety Commission (FRSC) (2022b), "The NDL digital driver licence", available at: <https://nigeriadriverslicence.org/digitalLicense> (accessed 5 March 2024).
- [17] Guardian (2020), "How NIN is used as weapon against citizenry", 14 January, available at: <https://guardian.ng/opinion/how-nin-is-used-as-weapon-against-citizenry/> (accessed 2 August 2023).
- [18] Independent National Electoral Commission (INEC) (2019), "Rights and responsibilities of the voter during the 2019 general elections", available at: www.inecnigeria.org/voter-education/rightsand-responsibilities-of-the-voter-during-the-2019-general-elections/ (accessed 1 September 2023).
- [19] Guardian (2021), "INEC may not make NIN compulsory for voter registration", available at: <https://guardian.ng/news/inec-may-not-make-nin-compulsory-for-voter-registration/> (accessed 20 October 2023).
- [20] Clark, J. and Daly, C. (2019), "Digital ID and the data protection challenge", p. 5, available at: <https://documents1.worldbank.org/curated/en/508291571358375350/pdf/Digital-ID-and-the-Data-Protection-Challenge-Practitioners-Note.pdf> (accessed 24 December 2023).
- [21] Gelb, A. and Metz, (2017), "Identification revolution: can digital ID be harnessed for development?", p. 4, available at: www.cgdev.org/sites/default/files/identification-revolution-can-digital-id-be-harnessed-for-development-brief.pdf (accessed 20 December 2023).
- [22] Guardian (2019), "National identity card: another bumpy road to building national database", 09 November, available at: <https://guardian.ng/saturday-magazine/national-identity-card-another-bumpy-road-to-building-national-database/> (accessed 3 October 2023).
- [23] National (Money Laundering and Terrorist Financing) risk assessment forum (2016), "Report of Nigeria national risk assessment on money laundering and terrorism financing", p. 68, available at: www.nfiu.gov.ng/images/Downloads/downloads/nrareport.pdf (accessed 20 October 2023).
- [24] Independent National Electoral Commission (INEC) (2019b), "Total registered voters and PVC collection", available at: <http://www.inec.gov.ng/> (accessed 4 August 2022).
- [25] Independent National Electoral Commission (INEC) (2022), "About INEC", available at: www.inecnigeria.org/home/about-inec/ (accessed 18 January 2022).
- [26] National Identification Management Commission (NIMC) (2017), "A strategic roadmap for developing digital identification in Nigeria", p. 3, available at: https://nimc.gov.ng/docs/reports/strategic_RoadmapDigitalID_Nigeria_May2018.pdf (accessed 10 July 2023).
- [27] National Identification Management Commission (NIMC) (2014), "Harmonization and integration policy", p. 4, available at: https://nimc.gov.ng/docs/harmonization_policy.pdf (accessed 21 November 2023).
- [28] National Identification Management Commission (NIMC) (2022a), "About the e-ID card", available at: <https://nimc.gov.ng/the-e-id-card/> (accessed 2 October 2023).



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[25] National Identification Management Commission (NIMC) (2022b), "How to enroll adults", available at: <https://nimc.gov.ng/how-to-enrol-adults/> (accessed 10 October 2023). National Identification Management Commission (NIMC) (2022c), "Learn about the NIMC", available at: www.nimc.gov.ng/ (accessed 11 January 2024).

[26] [NILDS – National Institute for Legislative & Democratic Studies](#)