OVERCOMING DATA INTEGRATION CHALLENGES

A presentation

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Outline of Presentation

- PREAMBLE
- HISTORICAL BACKGROUND & CONSEQUENCES
- FOCUS NOW
- HARMONIZATION & INTEGRATION
- DATA INTEGRATION CHALLENGES
- STRATEGIES FOR OVERCOMING THE CHALLENGES
- CONCLUSION
<table>
<thead>
<tr>
<th>Establish a national Identity Database</th>
<th>Provide identity services- authentication &amp; verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue unique identifier</td>
<td>Harmonize &amp; integrate existing ID Databases</td>
</tr>
<tr>
<td>Issue a national ID card</td>
<td>Regulate the Nigerian identity Sector</td>
</tr>
</tbody>
</table>
Historical Background

- **FRAGMENTED**
- **NO COMMON STANDARDS**
- **MULTIPLE FORMS OF ID CARDS**
- **NO INTEROPERABILITY**
- **SILOS OF DATABASES**
- **LOW COVERAGE**
Consequences

Massive Exclusions
- Social benefits and the Poor
- Socio-economic Planning
- Claim of entitlements
- Basic rights

Undeveloped sectors -
(Financial, Industrial, Agricultural etc)
- Credit Bureau
- Consumer Credit
- Mortgage and other sectors
- Financial Inclusion

Security Issues
- Physical: Law and Order
- Business Environment
- Multiple/ghost/duplicate identities
- Frauds: Identity related Frauds & Scam
- Terrorism & Militancy:

Duplication of Systems/efforts
- Huge investment/infrastructure Cost
- High operational cost
- Maintenance of multiple & costly ‘silos ID databases’
- Creation of Idle Assets
Focus Now

Harmonized identity data across MDAs, connected by the National Identification Number - NIN
DATA HARMONIZATION AND INTEGRATION OBJECTIVE

- Uniform data and biometric standards
- Unique identifier to all (NIN)
- Mandatory use of National Identification Number (NIN)
- Universal coverage (Citizens, Residents, Diasporas)
- Interoperability (Connected Systems)
- One ID for Life
- Identity Data consolidation & Streamlining
- Trusted and Verifiable identity
Harmonizing and Integrating all Disparate Databases

Voter Register → Drivers’ License → SIM Register → BVN data from banks → National Identity DATABASE
History of Observed Data

History of observed data

Presidential Card Launch
Systems' Migration
Harmonization Data
Recession

# enrolments

Time

Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17

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Histogram of Observed Data

Mean Enrolment = 253,400
Deep Learning of the Observed Data
Latent Volatility Showing Improvements
Fitted Model tracks the Volatility over time
Source MDA Data

NIBSS
- BVN 30m

NCC
- SIMREG
  - 150m

FRSC
- Drivers License
  - 8m

NIS
- Passport
  - 10m

NHIS

NPopC

HARMONISATION WORK FLOW

Online Services/ Extract Transform and Load

Consolidated Cleansed Tables

Auto Profiling/ DQ Rules

Profiling Results

Bad Records (per System)

Bad Records (per System)

ETL

Profiling Results

Bad Records (per System)

NIMS (ABIS, NIDB, NVS, Master Data Repository (MDR))

Recommended
Systemic
Changes/ Auto ... Rules Data Integrations

Reporting Area
Profiling Results
DQ Issues
DQ Monitoring
Bad Records

Source: NIMC

NATIONAL IDENTITY MANAGEMENT COMMISSION

Source: NIMC
DENDROGRAM OF HARMONISED & INTEGRATED DATA - OUTPUT

**RECEIVED** (Total Records from Source agency)
3,976,852 (100%)

**PROCESSED** 3,923,415 (98.66%)

**Not PROCESSED** 53,437 (1.34%)

**NIN GENERATED** 2,351,510 (59.95%)

**HITS** 1,571,121 (40.05%)

**AFIS ERROR** 784 (0.02%)

**NON NIG.** 12,045 (22.54%)

**CHILDREN** 7,889 (14.76%)

**NOT ENOUGH FINGERPRINTS** 11,322 (21.19%)

**OTHERS** e.g. Data validation 22,181 (41.51%)

**NO SUCCEED**

**SUCCESSFUL NIN** 2,351,507 (99.9999%)

**15**

**True**

37.65% 56.35%

**False**

2.40% 3.60%

**Hit**

40.05% 59.95%

Yet to be Cleared.
91,128
HARMONISATION RELATIONSHIPS

Data from Functional MDAs

Foundational NPopC

Enrollment for New NIN

Input/Source

NIMC

Output/Products

NIN Provisioning

Statistical Data

NIN Verification

KYC Data
DATA INTEGRATION CHALLENGES

- Data release strategy & Format
- No common standards in demographic & Biometric data captured
- Disparity in the number of data fields captured by different agencies.
- Skills and Personnel deficiency for large data processing
- High Volumes of records for analysis, conversion, cleansing and processing
- Volume of Records with True/False Hits
- Large amount of records requiring manual intervention (Adjudication)
DATA INTEGRATION CHALLENGES

- Poor quality biometrics captured by source Agencies
- Infrastructural challenges with processing huge data (Lack of or scale up)
- No central reference database for decision making
- Absence of a central ID authentication & verification service
- Peculiarities of Agency’s IT environment and Legal Framework
OVERCOMING DATA INTEGRATION CHALLENGES

…High level Government Directives on Harmonization

**President Buhari’s directive:**

“… that all ministries, departments and agencies (MDAs) should expeditiously harmonize their biometric databases”.

**At a meeting with a Partner Agency,**

President Muhammadu Buhari charged government agencies to harmonize the collection and usage of biometric data in the country, instead of replicating their efforts in this regard.

**VP Osinbajo Speaks:**

...all government agencies collecting demographic and biometric data of citizens and legal residents, to aggregate their data into a single databank, to be domiciled with and managed by the National Identity Management Commission (NIMC).
OVERCOMING DATA INTEGRATION CHALLENGES

- Establishment of Committee on Harmonization & integration for buy-in and ownership (Membership of all Stakeholder)
- Development of Biometrics, Demographic & Interoperability Standards
- Development of Harmonization & Integration Framework
- Deployment of a separate Infrastructure to process the aggregated data
- Setting up of ad-hoc teams to deal with the volume of records (Technical, Adjudication, Steering Committee)
- Redeployment of more personnel to the Harmonization sub Project
OVERCOMING DATA INTEGRATION CHALLENGES

- Roll out of Authentication and Verification Services
- Development and use of demographic de-duplication to reduce records to be run through ABIS.
- Planned acquisition of Infrastructure, Hardware/Software such as Master Data Repository (MDR) solution to identify “Golden records”.

National Identity Management Commission
Centralized National Identity Database will drive efficiency & transparency in:

- Governance,
- Service delivery,
- Enhance Security,
- Enforce anti-money laundering compliance,
- Reduce Crime, etc.

The success of the programme depends on the commitment of government at the highest levels & all stakeholders.
THANK YOU

AND

ENJOY THE REST OF THE CONFERENCE