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

Preamble

Establish a national Identity Database

Provide identity services- authentication & verification

Issue unique identifier

Harmonize & integrate existing ID Databases

Issue a national ID card

Regulate the Nigerian identity Sector

Historical Background

FRAGMENTED

NO COMMON STANDARDS

SILOS OF DATABASES

MULTIPLE FORMS OF ID CARDS

NO INTEROPERABILITY

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
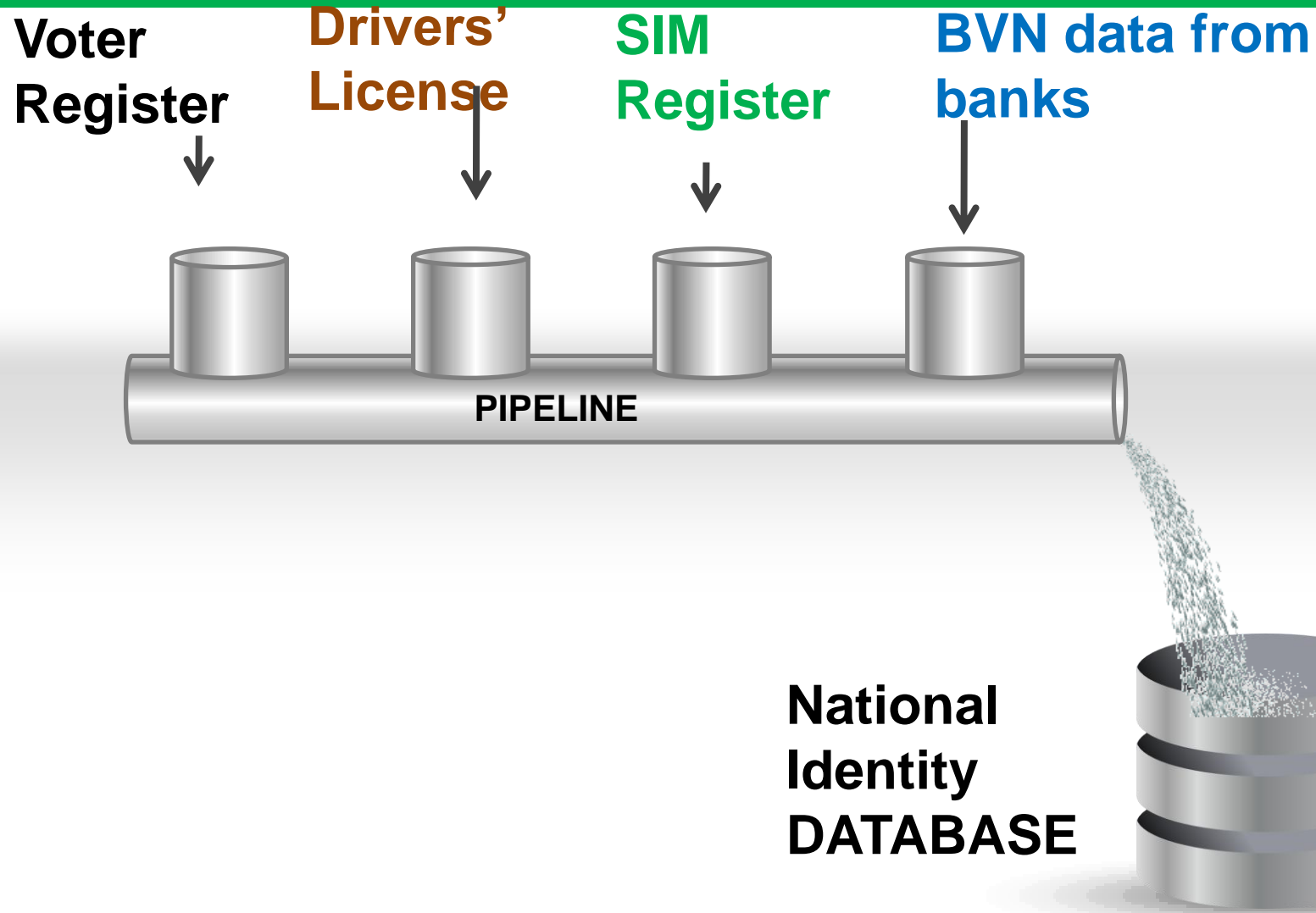- Maintenance of multiple & costly 'silos ID databases'
- Creation of Idle Assets

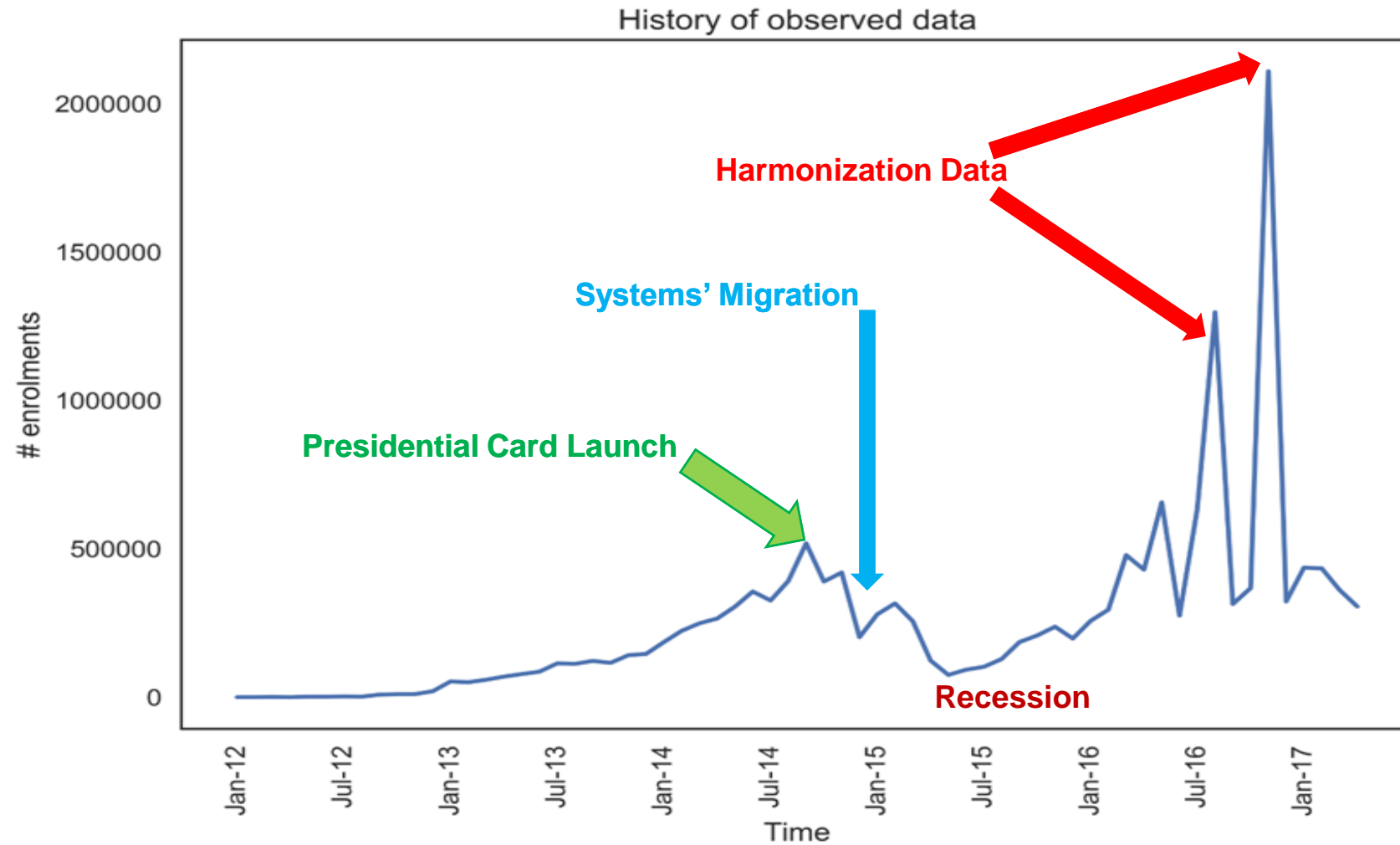## Harmonized identity data across MDAs, connected by the National Identification Number -NIN

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

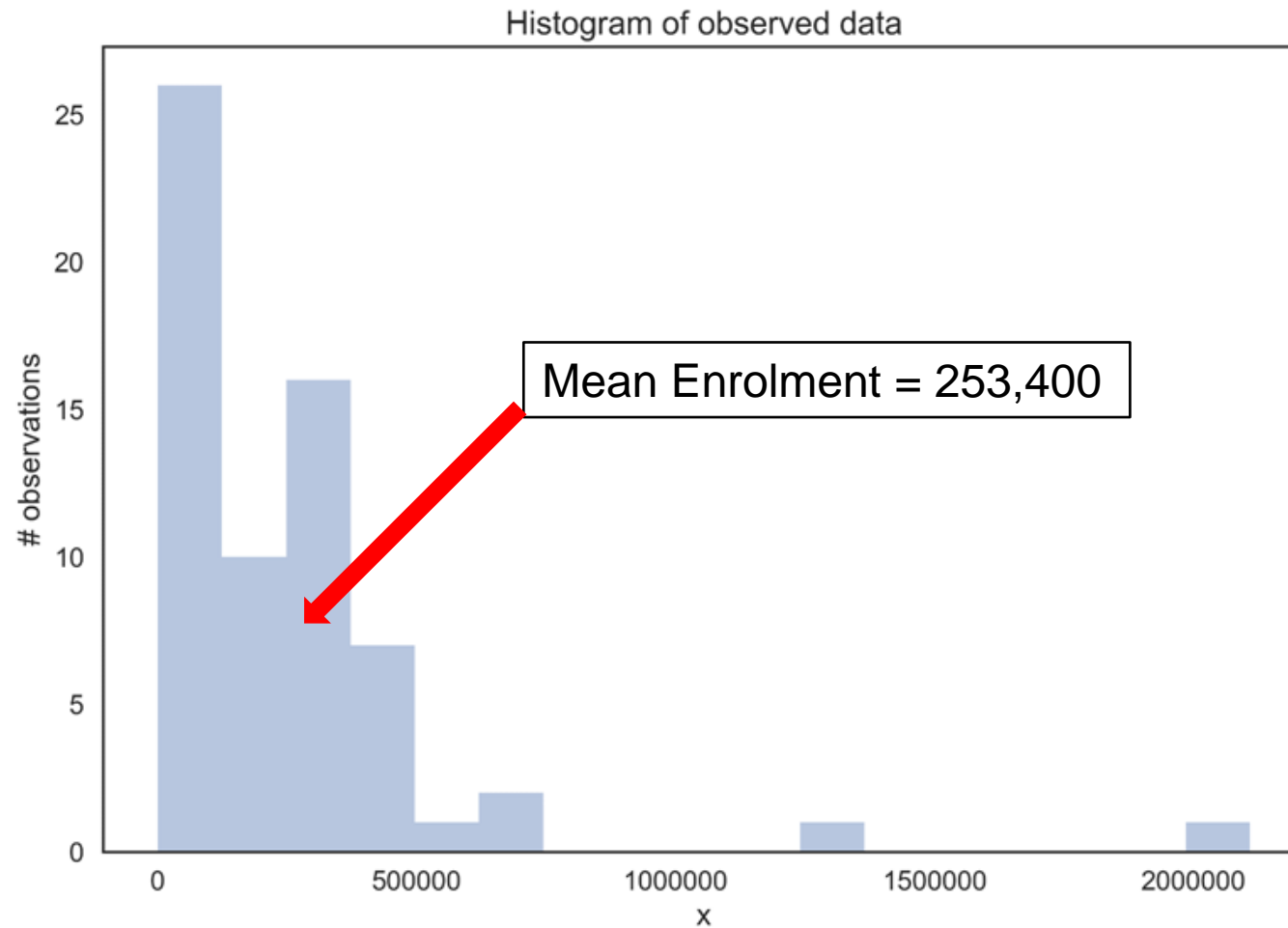➢Identity Data consolidation & Streamlining

➢Trusted and Verifiable identity

Harmonizing and Integrating all Disparate Databases

Voter Register

Drivers' License

SIM Register

BVN data from banks

PIPELINE

National Identity DATABASE

History of Observed Data

History of observed data

- Harmonization Data
- Systems' Migration
- Presidential Card Launch
- Recession

National Identity Management Commission
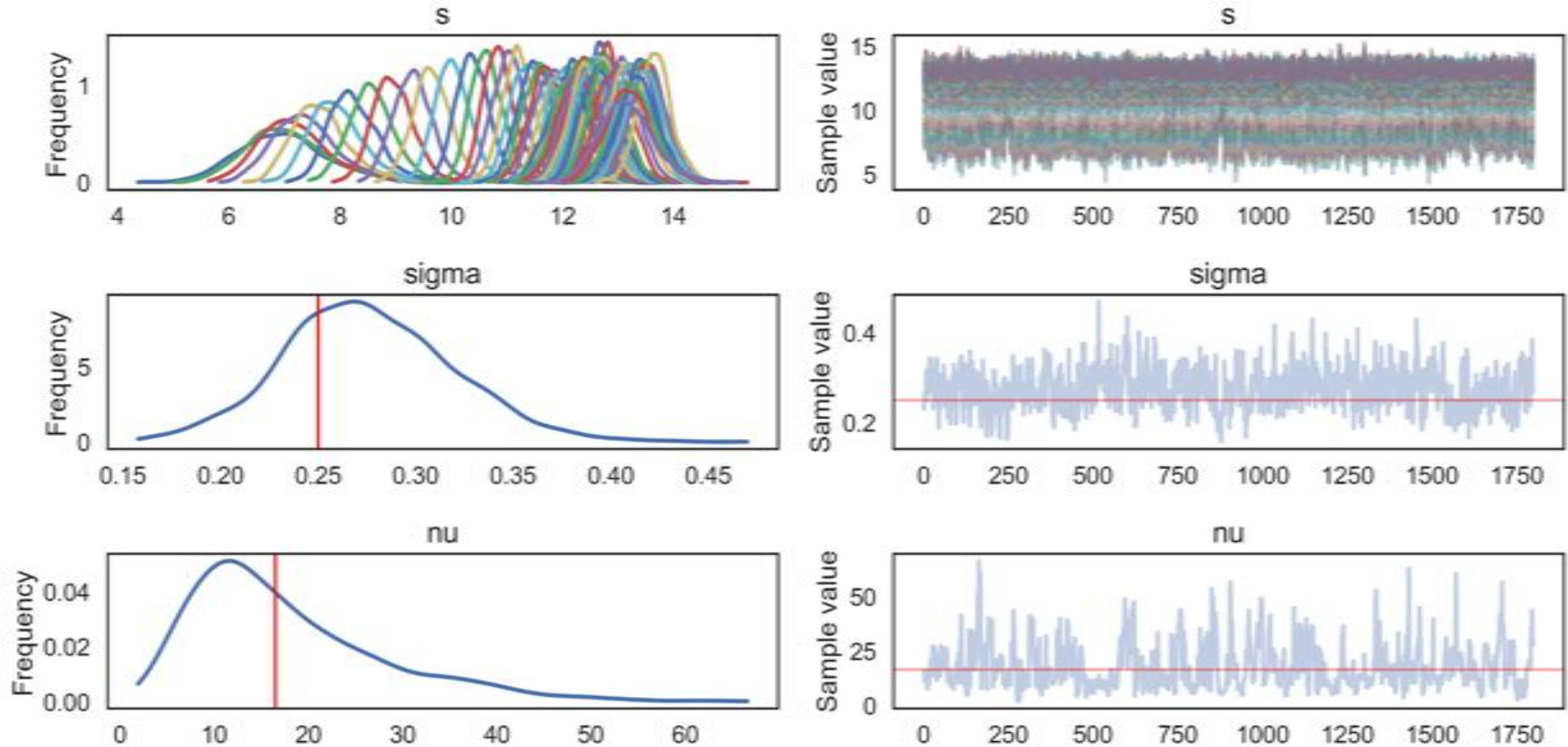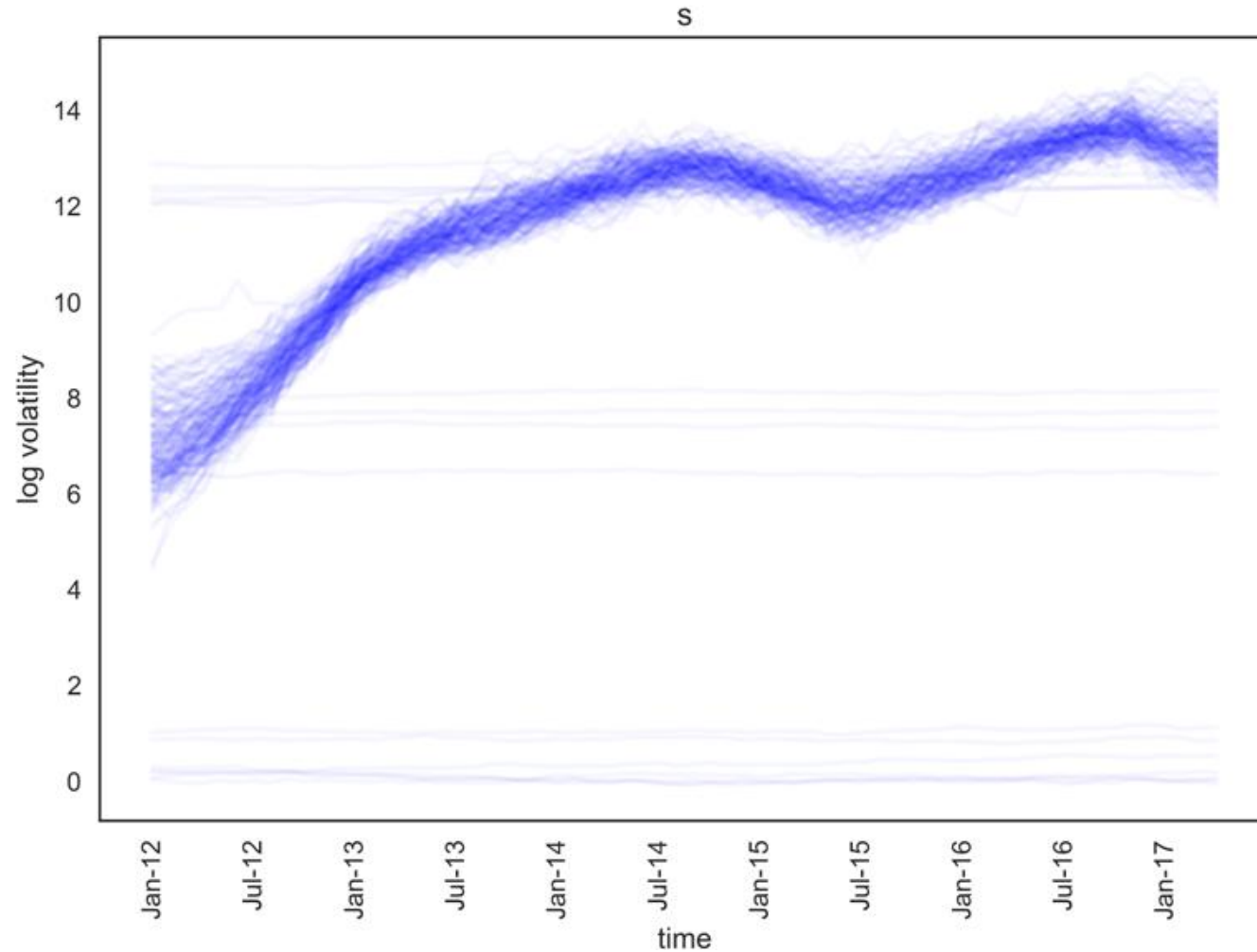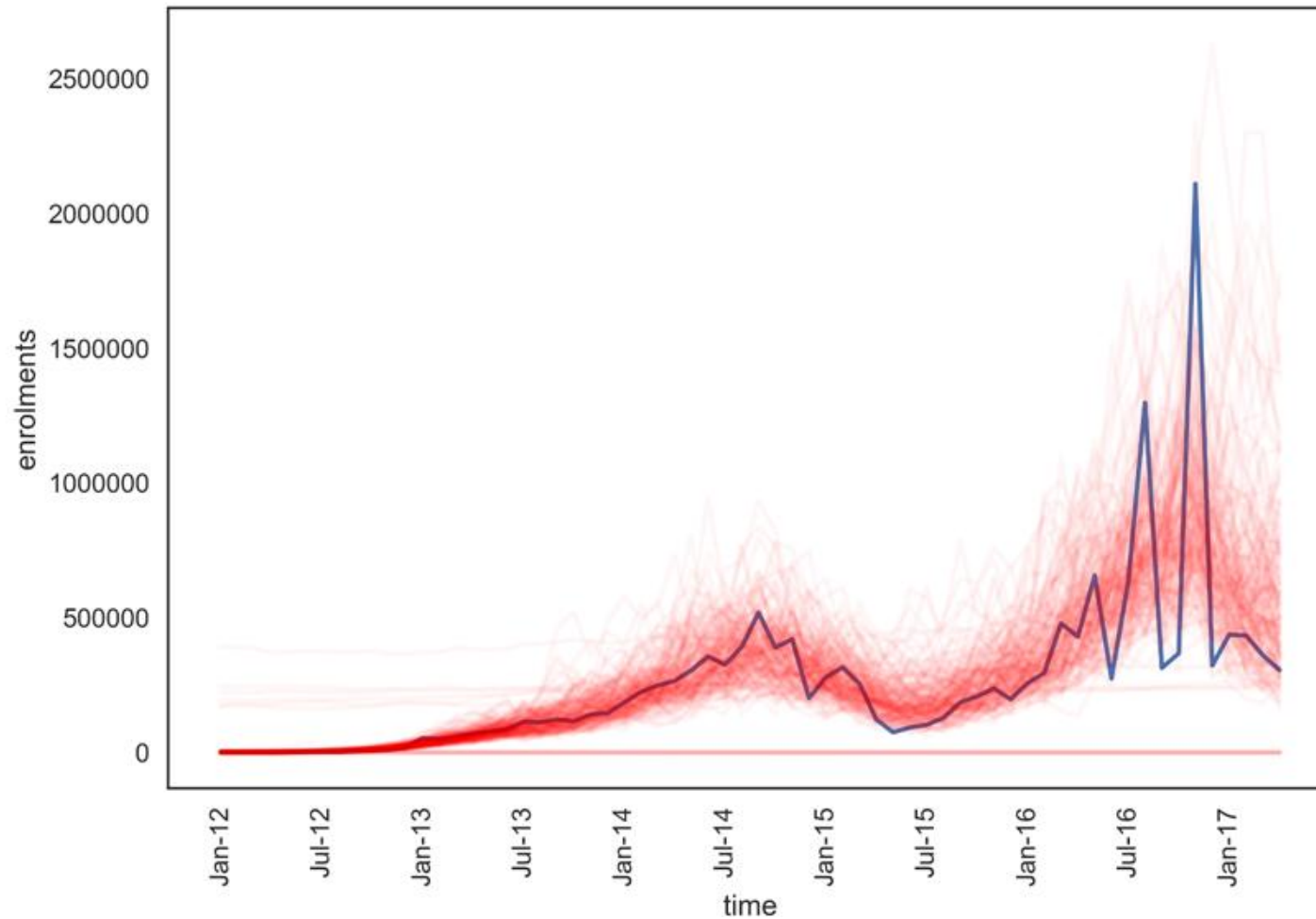
Histogram of Observed Data

Deep Learning of the Observed Data

Latent Volatility Showing Improvements

Fitted Model tracks the Volatility over time

HARMONISATION WORK FLOW

Source MDA Data

- NIBSS — •BVN 30m
- NCC — •SIMREG •150m
- FRSC — •Drivers License •8m
- NIS — •Passport •10m
- NHIS
- NPopC

Online Services/ Extract Transform and Load

ETL

- Staging Tables (Source Lake Individual Tables per system)
- **ETL** → Consolidated Cleansed Tables
- Auto Profiling/ DQ Rules
- Auto Profiling/ DQ Rules
- Profiling Results
- Bad Records (per System)
- 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

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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%)

BY PASS 3 (0.0001%)

SUCCESSFUL NIN 2,351,507 (99.9999%)

Yet to be Cleared. 91,128

True HITS 1,393,830 (94.18%)

FALSE HITS 86,163 (5.82%)

True 94.18%	**37.65%**	**56.35%**
False 5.82%	**2.40%**	**3.60%**
	Hit 40.05%	**Success 59.95%**

HARMONISATION RELATIONSHIPS
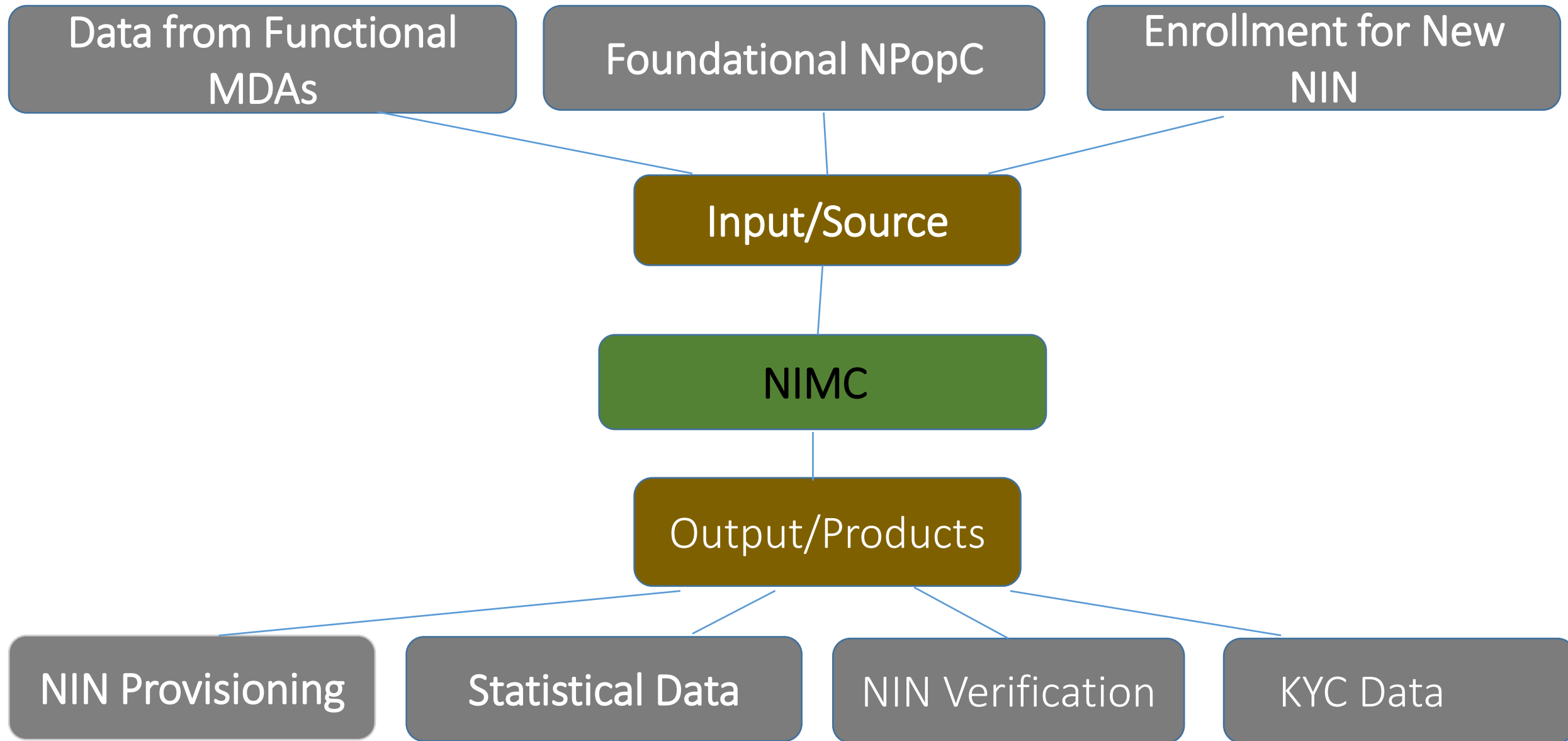
DATA INTEGRATION CHALLENGES

➢ 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

…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).

- 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

- ➢ 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***".

CONCLUSION

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