

MERGING NPR and UID ???

Some purely personal (unofficial) thoughts by

Rajesh Aggarwal, IAS

Principal Secretary, Information Technology, Government of Maharashtra

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This Paper will raise more questions than give answers, and that is the whole purpose of penning down this paper – to generate discussion. I believe I have some credentials to pen down this paper, as my Team in DIT, Maharashtra has got Maharashtra to be #1 in the country in UID enrolment, with more than 9 crore enrolments, and has set up the most impressive UID eco-system. Our UID SRDH (State Resident Data Hub) is also fully aligned to Census 2011 locations database, which nobody else in the country has done. Earlier, during my stint with Election Commission of India from 2004-2007, we got 70 crore voter list on Central Servers in 15 Indian Languages, did massive effort to get them into Unicode, and linked them with 50 crore photographs (20 crore digital and 30 crore scanned from old laminated sheets), to produce PHOTO ROLLS. At that time, Hon'ble President Abdul Kalam was talking of Digital National Population Register, and in ECI, we were excited to practically have this digital National population Register of 18+ Age Group, with Names, addresses and Photographs. In border areas, there is concept of "D voter" (Doubtful Voter – whose citizenship is in doubt). The Delimitation of Parliament and Assembly Constituencies based on 2001 census, and done during the period 2003-2007, was totally on Census of India village and city ward boundaries. Election Commission, Delimitation Commission and Registrar General of India worked closely to produce most scientific, totally GIS based delimitation exercise, the biggest in the World. Having hands on experience with World's biggest voter database, biggest citizen photo database, biggest delimitation exercise and biggest biometric database has been a wonderful experience. I believe the time has come to now merge all of these into one seamless database.

UNIQUE IDENTIFICATION NUMBER vs CITIZENSHIP

EVERY individual present in the country, whether an Indian Citizen, or an immigrant (whether legal or illegal) or a Visitor (with proper Visa, whether staying here within visa period or overstaying a bit) needs to be identified properly and uniquely. The UID never positioned itself as citizenship card. In that sense, having broader coverage than just the citizens has its benefits. Getting biometrics of immigrants and Visitors can actually help the Security Agencies. But the ground reality remains that getting hold of UID can enable some illegal immigrants to get other papers like Ration Card and Voter Card etc., which are meant only for Indian citizens. The other benefits like Bank accounts, driving license need not be deeply linked to citizenship issue. Hence there is a need to have a clear-cut action plan to delink UID number from citizenship issue, and to ensure that UID card/number is not used to get benefits which are available only to citizens. For availing such benefits, NPR number linked to Citizenship rather than UID number should be used.

ENROLMENT PROCESS, UID vs NPR

The market driven, multiple Registrar approach of UID has shown very clear results, reaching 60 crore enrolments in 3 years. Election Commission has taken two decades to reach this number of EPIC cards, and Census of India has also done smaller numbers compared to this.

Census of India approach to give enrolment machines through BEL and ECIL etc. has also been appreciated by enrolment agencies, reducing their costs and risks in biometric enrolment. In last two years, the biometric enrolments by NPR also have been as fast as UID enrolments.

In UID enrolment, about half the enrolments are obliquely supervised by District Collector or Field Government machinery, while half are totally by Banks or Oil Agencies etc. Whether in UID or NPR, ultimately the agencies like BEL, ECIL, Banks, LPG companies are just one part of the chain, and exercise really little control over quality of enrolment. In both the projects, there have been multiple

levels of outsourcing. The operator actually enrolling people in the field has no clue about this whole chain of agencies involved. Fortunately or unfortunately, this is the way the Information Technology sector works- multiple levels of outsourcing. I believe that more than Government supervision of enrolment, it is better documentation of the database structures, lots of validation checks, both at client and server levels etc. which can lead to better quality of enrolment.

In my experience, it is difficult to test the data accuracy of NPR v/s UID. The private operator enrolling people in the field is the same in both cases, and the Talathi or Patwari or School Teacher is also the same. I believe that NPR enrolment process is slightly better than UID, not because it ostensibly uses government machinery, but because it has decades of experience of creating Forms, enumeration processes, base maps of localities and Houses etc. UID ignored the creation of locality maps, strong linkage to Census 2011 Village/City coding etc. Instead, the US returned consultants, familiar with Zip Codes in USA, used Pin Code based drop downs in UID enrolment client. This has led to non-standardization in even State and District names, especially in Phase 1.

DATA QUALITY ISSUES with our National databases

- How “accurate” is country’s Voter list? (90%? 80%? 70%? You guess!)
- How accurate is our Ration Card database? (70%? 60%?)
- How accurate is our BPL (Below Poverty Line) database? (50%? 30%?)
- How accurate is our Census Enumeration?
- How accurate is UID database?

In Maharashtra, we have done detailed backend analysis of UID database in our UID Innovation Labs, and also done lot of field-level cross verification during the Seeding exercise. Our analysis shows:

- Photos are about 99.9% acceptable quality. My team is separately releasing Paper on our Research into Photo Quality Issues using OpenCV- please go through it on <http://aadhaar.mahaarashtra.gov.in>

- Names and Age field are of about 99.5% acceptable quality, and if errors like spelling mistakes in English/Marathi etc. are ignored, then this goes beyond 99.9% accuracy level.
- In Iris and Fingerprint, accuracy may be the tune of 1 in 10,000 error.
- The Address field is accurate 99% in the sense that person can be traced, but address field standardization is quite pathetic.
- Wherever the UID coverage was almost 100%, and we tried to compare other databases against UID list, we find that 10-30% people do not seem to exist. This indicates huge potential of UID in saving money going to Ghost beneficiaries or Duplicate beneficiaries in our various subsidy linked schemes.

DISTRIBUTION of UID numbers or Cards

Is UID a Number or a Card? Theoretically the Number is enough, but practically the Aadhaar Letter is more useful to people- they can xerox it and attach it as a valid proof of address or proof of identity document, or they can cut out the Card like portion from the letter, get it laminated, and use it as a Government given ID card to enter Airports, trains etc.

Unfortunately, thousands (or lacs?) of Aadhaar letters have not reached people. Printing agencies, their logistics teams, and Postal authorities goofed up quite a bit. Ideal, though cumbersome process would have been to issue the Card (Aadhaar Letter?) only after online biometric based receipt, which would also serve the purpose of verifying that the Card indeed belongs to the correct person and was received by the correct person. This would be always difficult to achieve, because during the time gap between enrolment and delivery of card, many people would change their address.

Wonderful UID (Aadhaar) Eco-System

DBT (Direct Benefits Transfer) created confusion in many people's minds on shift from subsidy-in-kind to subsidy-in-bank. It actually helps in both cases. Where subsidy is given in kind (LPG cylinder, Kerosene, Rice, Bicycle, Laptop whatever), the UID ecosystem of online authentication of genuine beneficiary can greatly help. Where subsidy (or wages) is given in cash, it helps in moving cash towards bank transfer (thus stopping leakages). This happens because millions of people have been able to open bank accounts for the first time, as RBI allowed use of Aadhaar letter as Proof of Identity plus proof of address. It also enables BCs (Bank Correspondents) to carry Aadhaar enabled hand-held machines to be taken to villages, or at MNREGA sites to authenticate people, and letting them deposit or take out small amounts.

Secondly, as I have indicated earlier, wherever any other database is cross verified against UID, about 10-30% duplicate or bogus names can be deleted. All such computer-based comparison must be followed by house-to-house field verifications, and then names should be deleted. Savings achieved in reducing subsidies will be mind boggling.

The ONLINE verification has one incredible side-benefit. Citizens can avail of many government services sitting at home, rather than going to a government office. The UID Server authenticates you rather than a government staff saying you are you! Our IGR Stamp Duty has launched a website which allows house owners and tenants to sit at home (or go to a cyber café, or the property broker office etc.) and authenticate themselves using UID authentication API, make online payment of government fees, and print the agreement. No need to step into a government office! This could be truly game changer, if followed by other departments.

I can go on and on, about potential benefits of UID online authentication system. Imagination is the limit!

Semi-SMART CARD by NPR with UID at the back-end?

The Compromise Formula of half the country having UID-led enrolments and half the country having NPR-led enrolments is leading to quite a bit of duplication. Ideally, a person approaching NPR booth should tell them he or she already has a UID card, and then fresh biometric is avoided. In reality, this does not happen. Lacs of people have got biometric enrolment from both UID and NPR, and thousand would have got multiple UID numbers.

If UID and NPR indeed get merged, with enrolments carried out by NPR, while the UID backend doing the job of identifying duplicates, then in my view, UID should issue a number and not a Card or Letter, and NPR should issue a Reasonably Smart Card, maybe just having BARCODE on it which can just be read by any Smart Phone or a cheap Reader. Having other Smart Features would require spending tens of thousands of crores of rupees on Readers for those features. My personal view is that it is impossible to have a SINGLE Smart Card catering to all possible needs of the citizen, and our Wallets will continue to have multiple cards for some years to come. Hence, the Citizen Card need not be all-features-and-data-encompassing, but should have simple features. However, this needs wider consultation.

However, Unique Person ID is not enough!

THREE parameters are needed - Unique Person ID, Unique Location ID and a Time Stamp, to indicate at what time a specific individual is at what specific address.

More than 65 years after independence, country does not have a unique house numbering system. My house number appears differently in voter List, MSEB, Landline Phone list, Census List etc. Even GoI Ministries use different lists of District and Village names. The Survey of India, NIC, ISRO's Bhuvan, States' Space Application Centres, and other such agencies are having different village and City Names, Codes and GIS boundaries.

In Taiwan, Election Commission does NOT maintain a Voter List. Instead, the Citizens notify their Change in Address in a single National Address Database with the Home Ministry. When elections take place, the Election Commission picks up this database 18 days before the date of election, and just prints the list of 18+ people polling booth wise. All other Agencies also use this address database. Imagine the Citizen notifying changing his or her address only at one single place, and then all other Government Agencies, Bank, Electricity company etc. coming to know that you have changed your address. Saves so much hassle!

I believe that NPR agency should go much beyond National Population Register.

First, it should maintain list of entire Population (thus National Citizen Register is a Subset of National Population Register), have a separate Flag in database for Citizenship (verified-correct, still-to-be-verified, doubtful, or illegal Immigrant or a Visitor).

Second, it should create and maintain the National Address Database with proper very detailed GIS database, showing village boundaries, city localities and roads, and ultimately building footprints. People must notify the change in address whenever they change the address. Only people having Unique ID should be able to do this, with proper online verification mechanism, otherwise I will change your address! Death Registers, and Visitor Exit data, or Illegal immigrant deportation data has to feed into this National address database. Data required by all other Agencies (BPL list, Foreigners list, Voter List etc.) should be culled out of this database whenever required, or built upon this database.

Third, NPR should effectively use the UID back-end do the de-duplication process, as well as use the Wonderful Eco-system created by Aadhaar!