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1 Introduction and historical background

A crucial factor that determines an individual's well-being in a country is whether their identity is recognized in the eyes of the government. Weak identity limits the power of the country's residents when it comes to claiming basic political and economic rights. The lack of identity is especially detrimental for the poor and the underprivileged, the people who live in India's "social, political and economic periphery". Agencies in both the public and private sector in India usually require a clear proof of identity to provide services. Since the poor often lack such documentation, they face enormous barriers in accessing benefits and subsidies.

For governments and individuals alike, strong identity for residents has real economic value. While weak identity systems cause the individual to miss out on benefits and services, it also makes it difficult for the government to account for money and resource flows across a country. In addition, it complicates government efforts to account for residents during emergencies and security threats.

1.1 Historical background and evolution of the UIDAI project

The concept of unique identification was first discussed and worked upon since 2006 when administrative approval for the project – "Unique ID for BPL families" was given on March 3rd, 2006 by the Department of Information Technology, Ministry of Communications and Information Technology. This project was to be implemented by the NIC over a period of 12 months. Subsequently, a Processes Committee to suggest processes for updation, modification, addition and deletion of data fields from the core data base to be created under the Unique ID for BPL families Project was set up on July 3rd, 2006.

The EGoM was constituted on December 4th, 2006. The first meeting of EGoM was held on November 27th, 2007. It recognised the need for creating an identity related resident database, regardless of whether the database is created based on a de-novo collection of individual data or is based on already existing data

such as the voter list. It also recognised that there is a crucial and imperative need to identify and establish an institutional mechanism that will “own” the database and will be responsible for its maintenance and updating on an ongoing basis, post its creation.

The second meeting of EGoM was held on January 28th, 2008. It decided on the strategy for the collation of NPR and UID. Inter-alia, the proposal to establish UID Authority under the Planning Commission was approved.

The third meeting of EGoM was held on August 7th, 2008. The Planning Commission had placed before the EGoM a detailed proposal for setting up the UIDAI. The meeting decided that certain issues raised by the members with relation to the UIDAI would need to be examined by an official level committee. It referred the matter to a Committee of Secretaries to examine and give its recommendations to the EGoM to facilitate a final decision.

Fourth meeting of EGoM's was on 4 November 2008, The Unique Identification Authority of India was constituted as an attached office under the aegis Planning Commission with an initial core team of 115 officials.

Subsequently on July 2nd, 2009 Shri Nandan Nilekani was appointed as the Chairman of the UIDAI. Shri Nilekani assumed charge on 23rd July, 2009 and since then the UIDAI has started functioning. The Prime Minister's Council on UID Authority was constituted on 30th July, 2009 and its first meeting had taken place on 12th August, 2009. The Council endorsed the broad approach submitted by the UIDAI.

1.2 Composition of UIDAI authority

- Shri J Satyanarayana, Chairman(part-time),UIDAI
- Dr. Ajay Bhushan Pandey, Chief Executive Officer(CEO),UIDAI

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- Shri Rajesh Jain, Member(part-time),UIDAI
 - Dr. Anand Deshpande, Member(part-time),UIDAI

2 The UIDAI implementation model

The model that the UIDAI envisions will have the reach and flexibility to enrol residents across the country.

The UIDAI, as a statutory body, will be responsible for creating, administering and enforcing policy. The UIDAI will prescribe guidelines on the biometric technology, the various processes around enrolment, and verification procedures to be followed to enroll into the UID system. The UIDAI will also design and create the institutional microstructure to effectively implement the policy. This will include a Central ID Data Repository (CIDR), which will manage the central system, and a network of Registrars who will establish resident touch points through Enrolling Agencies.

2.1 The Central Identities Data Repository (CIDR)

The CIDR will be the central data repository, and will function as a Managed Service Provider. It will implement the core services around the UID – it will store resident records, issue unique identification numbers, and verify, authenticate and amend resident data. The CIDR will only hold the minimum information required to identify the resident and ensure no duplicates.

2.2 The Unique Identity Number

The Unique ID or UID will be a numeric that is unique across all 1.2 billion residents in India

The UIDAI will also be collecting the following data fields and biometrics for issuing a UID:

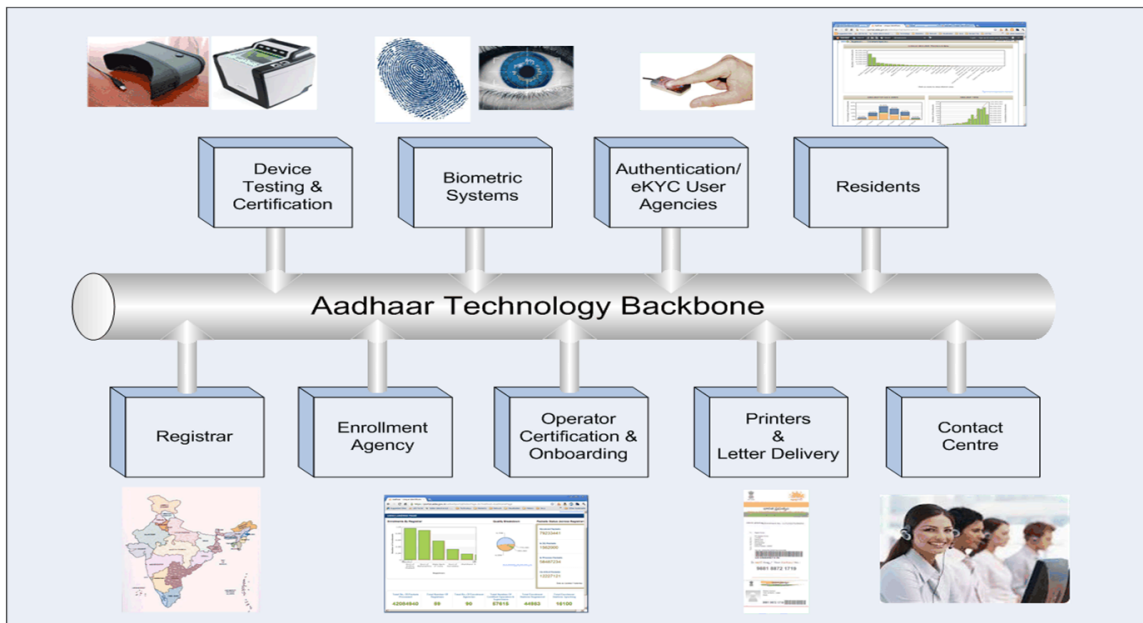
- Name.
- Date Of Birth.
- Gender.
- Father's/ Husband's/ Guardian's name and UID (optional for adult residents)
- Mother's/ Wife's/ Guardian's name and UID (optional for adult residents)
- Address.
- All ten finger prints, photograph and both iris scans.

2.3 The Unique ID agencies

- Registrars.
- Sub Registrars.
- Enrolling Agencies.
- Outreach Groups

3 Enrolment into the UID system

3.1 Enrollment process



The enrolment process for the UID number will begin with a resident submitting his/her information to the enrolling agency with supporting documents. This information will be verified according to the prescribed verification procedure as per the DDSVP Committee Report. To make sure the poor are not excluded, the UIDAI has prescribed guidelines for applicants without documents.

Once the enroller verifies the resident's information, it will submit the application request – either singly or in batches – through the Registrar to the CIDR. The CIDR will then run a de-duplication check, comparing the resident's biometric and demographic information to the records in the database to ensure that the resident is not already enrolled.

Since de-duplication also compares biometric records, it would catch individuals enrolling with a different set of demographic details. The fact that the UID system is both de-duplicated and universal will discourage residents from giving incorrect data at the time of enrolment.

3.2 Issuing the UID number

Once the UID number is assigned, the UIDAI will forward the resident a letter which contains his/her registered demographic and biometric details. This letter may also have a tearaway portion which has the UID number, name, photograph and a 2D barcode of the finger print minutiae digest. If there are any mistakes in the demographic details, the resident can contact the relevant Registrar/enrolling agency as per a prescribed procedure.

If the Registrar issues a card to the resident, the UIDAI will recommend that the card contain the UID number, name and photograph. They will be free to add any more information related to their services (such as Customer ID by bank). They will also be free to print/ store the biometric collected from the applicant on the issued card. If more registrars store such biometric information in a single card format, the cards will become interoperable for offline verification. But the UIDAI will not insist on, audit or enforce this.

All data entry that the enrolling agencies take up on behalf of the Registrars will be done in English. It can then be converted into the local language using standard transliteration software, and verified for accuracy by the Registrar. The letter the UIDAI sends the resident will consequently contain all demographic details in English as well as the local language of the state in which the resident resides. In this regard, the UIDAI will follow the precedent set by the Election Commission of India.

3.3 Enrolment in UIDAI project

Rank	State / Union Territory	Population	AADHAARs Issued	% of Population
◆	INDIA ◆	1,278,229,800 ◆	1,122,553,603 ◆	88% ◆
1	Delhi	17,720,573	20,846,334	118%
2	Haryana	26,816,977	27,565,296	103%
3	Telangana	37,253,813	37,997,961	102%
4	Punjab	29,303,888	29,756,585	102%
5	Himachal Pradesh	7,252,406	7,359,276	101%
6	Lakshadweep	68,149	68,983	101%
7	Chandigarh	1,115,584	1,116,319	100%
8	Goa	1,541,892	1,527,883	99%
9	Kerala	35,315,493	34,977,329	99%
10	Chhattisgarh	27,014,896	26,400,345	98%
11	Dadra & Nagar Haveli	362,649	354,215	98%
12	Puducherry	1,316,320	1,284,128	98%
13	Andhra Pradesh	52,229,924	50,722,016	97%
14	A & N Islands	401,882	389,333	97%
15	Jharkhand	34,869,720	33,778,892	97%
16	Uttarakhand	10,700,897	10,308,862	96%
17	Maharashtra	118,861,427	111,570,155	94%
18	Tripura	3,882,999	3,643,270	94%
19	Karnataka	64,660,412	60,236,826	93%
20	Madhya Pradesh	76,789,374	71,468,080	93%

21	Gujarat	62,100,000	57,101,842	92%
22	Sikkim	642,776	589,595	92%
23	Tamil Nadu	76,304,287	68,617,594	90%
24	West Bengal	96,622,186	85,733,856	89%
25	Rajasthan	72,583,213	63,891,456	88%
26	Odisha	44,369,413	38,876,522	88%
27	Uttar Pradesh	211,105,381	175,142,905	83%
28	Daman & Diu	256,937	206,419	80%
29	Bihar	109,798,353	85,016,105	77%
30	Manipur	2,878,911	1,958,818	68%
31	Jammu Kashmir	13,273,505	8,877,651	67%
32	Arunachal Pradesh	1,462,443	932,864	64%
33	Mizoram	1,154,010	657,939	57%
34	Nagaland	2,094,963	1,151,075	55%
35	Meghalaya	3,135,150	278,906	9%
36	Assam	32,968,997	2,147,968	7%

As of 12 March 2017 , 1.127 billion Aadhaar number had been issued.

Over 99 percentage of the 18 plus age population was covered as of this date

4 Expenditure on UIDAI project

YEAR EXPENDITURE

2009-10 262 million (US\$3.9 million)
 2010-11 2.684 billion (US\$40 million)
 2011-12 11.875 billion (US\$180 million)
 2012-13 13.387 billion (US\$200 million)
 2013-14 15.444 billion (US\$230 million)
 2014-15 16.153 billion (US\$240 million)
 2015-16 16.791 billion (US\$250 million)
 2016-17 8.772 billion (US\$130 million)

Total 85.368 billion (US\$1.3 billion)

From the beginning of the project in 2009 through February 2017, the Government spent a total of 85.368 billion(US\$1.3 billion) on the UIDAI project.

5 Features of Aadhaar

- The Unique Identification number (UID) will only provide identity.
- The UID will prove identity, not citizenship.
- Enrolment of residents with proper verification.
- A partnership model .
- The UIDAI will emphasize a flexible model for Registrars.
- Enrolment will not be mandated.
- The UIDAI will issue a number, not a card.
- The number will not contain intelligence.
- The UIDAI will only collect basic information on the resident.
- Process to ensure no duplicates.
- Online authentication.
- The UIDAI will not share resident data.
- Technology will undergird the UIDAI system.

6 Challenges in generating UID

6.1 Technical Risks

- Unstable biometrics..
- Inability to handle huge number of transactions per second.
- Errors in data recording and data compilation.

6.2 External Risks

- Sharing of personal data with a non-trustworthy party.
- Political risk.
- Enrolment will not be mandated.
- The UIDAI will issue a number, not a card.

6.3 Organizational Risks

- Duplicate and fake identities (human behaviour risk).
- Training risk.
- Project management risk.

7 Challenges with the previous subsidy and welfare payments framework

The fundamental challenge for any subsidy framework is to ensure effective targeting of beneficiaries.

Accurate beneficiary identification has traditionally been a complex task for social security and welfare programs.

Targeting errors within social and welfare programs are of two types :

- a. Errors of inclusion.
- b. Errors of exclusion.

The former involves the wrongful inclusion of beneficiaries ineligible for the subsidy, while the latter concerns the exclusion of eligible beneficiaries.

Addressing wrongful inclusion is one of the most formidable administrative challenges for Governments.

This includes the problem of ghost beneficiaries and fakes. Different eligibility norms come with different challenges.

For example, it is extremely difficult to accurately assess income, one of the most common form of eligibility criteria, with any reasonable degree of accuracy.

The lack of electronic databases of beneficiaries and the lack of a common unique identifier leads to misreporting of information to receive benefits.

A common example is that of the same beneficiary receiving subsidy for both fuels, kerosene and LPG.

The second targeting error, the exclusion of eligible beneficiaries, is one of the biggest problems with many prevailing subsidy schemes.

Also, socially disadvantaged communities are left out of social subsidy programs, often due to discrimination.

Many beneficiaries get excluded because they are unaware of the scheme, or are unable to fulfil the procedural formalities, or provide

the documentation required, or due to rent seeking middlemen.

Since subsidies, by definition, provide for the delivery of goods or services at prices that are lower than market prices, they generate several incentive distortions among those delivering, administering and receiving it.

8 Desired elements of a subsidy framework

Any effective subsidy regime has to incorporate the following elements:

- Empowerment and choice for beneficiaries.
- Transparency in subsidy administration and information visibility .
- One price for subsidized goods .
- Efficiency in production .
- Support all types of direct subsidy transfer models.
- Fully electronic service delivery.

9 Use of technology in increasing efficiency, delivery and transparency

9.1 Role of Aadhaar in fulfilling the desired elements of subsidy framework

- Ensures one beneficiary has one number across subsidy programs.
- Enables real-time authentication of identity at the time of subsidy delivery .
- Enables delivery of welfare benefits and subsidies through direct transfers into Aadhaar enabled Bank Accounts (AEBA) using the Aadhaar Payments Bridge.

9.2 How Aadhaar helps

Program / Entity	Better Reach & Targeting	Reduced Leakages / fraud	Reduced Cost of Service Delivery	Widen Tax Base	Greater efficiencies & effectiveness
Employment - MNREGA, SGSY, IAY, KVIC, PMEGP	✓	✓	✓	-	✓
Education - SSA, Right to Education	✓	✓	✓	-	✓
Food & Nutrition - PDS, Food Security, Mid Day Meals, ICDS	✓	✓	✓	-	✓
Inclusion & Soc Security - JSY, Dev of PTGs, IGNOAPS	✓	✓	✓	-	✓
Healthcare - RSBY, Janshri BY, Aam Aadmi BY	✓	✓	✓	-	✓
Financial Services	✓	✓	✓	✓	✓
Property Transactions		✓		✓	✓
Voter ID	✓	✓			✓
PAN Card		✓		✓	✓

10 Technological advancement

Aadhaar plays crucial role in digitalization by it's services.

- AEPS

The new payment service offered by the National Payments Corporation of India to banks, financial institutions using 'Aadhaar', the Unique Identification Authority of India (UIDAI) issued unique identification number shall be known as 'Aadhaar Enabled Payment System' and shall be referred to as "AEPS"

hereinafter.

Through AEPS Aadhaar as his/her identity to access his/her respective Aadhaar enabled bank account and perform basic banking transactions like balance enquiry, Cash deposit, cash withdrawal, remittances that are intra bank or interbank in nature, through a Business Correspondent.

- EKYC

. UIDAI offers the ekyc service, which enables a resident having an aadhaar number to share their demographic information and photograph with a UIDAI partner organization in an on-line, secure, auditable manner with the residents consent. The consent by the resident can be give via a biometric authentication or an one time password (OTP) authentication.

- BHIM APP

. BHIM (Bharat Interface for Money) is a Mobile App developed by National Payments Corporation of India (NPCI), based on the Unified Payment Interface (UPI). It was launched by Narendra Modi, the Prime Minister of India, at a Digi Dhan mela at Talkatora Stadium in New Delhi on 30 December 2016. It has been named after Bhim Rao Ambedkar and is intended to facilitate e-payments directly through banks and as part of the 2016 Indian banknote demonetization and drive towards cashless transactions.

This UPI app supports all Indian banks which use that platform, which is built over the Immediate Payment Service infrastructure and allows the user to instantly transfer money between the bank accounts of any two parties. It can be used on all mobile devices.

11 Difficulties with Aadhaar usage

- People who are still un enrolled for aadhaar are facing many difficulties such as :
 - i. Unable to access almost all government benefits effectively.
 - ii. Aadhaar is necessary for attempting most of board exams.
- Some functional errors which delivered card with incorrect information.
- Most of the rural area people are unaware of advanced technology involved in accessing services like Ekyc , Apes, Linking of bank account with aadhaar etc.
- Unauthorized use.
- Privacy and security concern.

12 Conclusion

- It is the world's largest ID platform. It is also the largest biometric programme in the world making India a global leader in biometric technology.
- Can be used to monitor development related parameters in such critical sectors as healthcare, education, etc. This can also facilitate development of electronic applications to bridge any gaps observed.
- Can help to map skilled manpower, based on the vocational training acquired by the individual, to suitable job vacancies/skill requirements of the State.

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- Enables instant paperless bank account opening, instant issuance of insurance and acts as a permanent financial address.
 - Is simple to use: it is not necessary for state to have a high degree of IT capability to adopt and initiate Aadhaar related service.
 - Helps significantly in reducing costs by increasing administrative efficiency and reducing leakages.
 - Provides a single view of beneficiary data and information.
 - Unique identification number of a beneficiary across all social welfare programmes helps in increasing efficiency, transparency and delivery .

13 References

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THE END