

The transformatory potential of *Aadhaar*
Providing empowerment, choice and convenience

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I will speak today about what the *Aadhaar* project is about, what it is going to do and why do we think it is important for empowerment, choice and convenience for the common man.

We have seen dramatic changes in many areas of technology. If you remember in India in 1990s it took us two years to get a landline phone. And today we have mobile phones everywhere. In 1995, we had about 60 million landlines and no mobile phones, but today we have 900 million mobile phones. We have seen how easy and fast communication has become for everyone.

Similarly news has become real time – now everybody gets news on Twitter, Facebook, etc. We have seen the impact of social media revolution – whether it is the case of anti-corruption movement or the terrible episode of gang rape in Delhi. It has been possible due to the rapid communication of the electronic social media.

Similarly let us look at the banking sector. We have migrated from branch based banking to online real time banking. Now you can go to any bank, withdraw your money and you can use the Automated Teller Machines (ATMs), mobile banking, etc.

We also have electronic voting machines today and railway reservation based on a computerised system. Everywhere we have seen and felt the impact of technology. This is the background to what we are doing in the *Aadhaar* programme.

There are two mandates in the *Aadhaar* programme: one is to provide a unique number to every resident of India by a one-time enrollment and allotment of a unique number; the second is to provide online, cost effective authentication of your identity anywhere in the country. The person providing the service needs to verify that you are the person you claim to be on the basis of certain documents. It will provide an online authentication capability across the country. Therefore, *Aadhaar* provides a unique and permanent number and the verification of a person's identity across the country.

Aadhaar would generate a 12-digit random number. For this we seek very simple information, such as the name, address, date of birth, sex. If one wishes, e-mail ID and mobile number could be recorded. Further, we record biometrics for each individual comprising of 10 finger prints and of the iris of both the eyes. The reason that we do this is for establishing uniqueness. Everyone's biometrics across these 12

attributes are unique and therefore it ensures that a person does not get more than one number.

We use a process called de-duplication. When somebody enrolls in our system with the biometric data the system compares that against the biometrics in the database of all the people to check whether it is duplicate or not. If it is a duplicate then we reject it. This is a fairly massive exercise if you have a database of 300 million people and if one million new people enroll on a day then each of those one million has to be compared against all 300 million in the database.

Though it appears complex, but over the last 10 years there have been dramatic improvements in the computing power, thanks to Moore's law and the use of large internet applications. Today we can do millions of matches every second. *Aadhar* uses massive and modern computational technology.

Aadhar provides the facility of on-line authentication. By feeding any unique identification number and biometrics anywhere in the country the system through its central server would confirm instantaneously whether the person is indeed the person he/she claims to be. This kind of online ID system has not been attempted anywhere else in the world.

So where are we today? This project began in July 2009 and we launched the *Aadhar* enrolment in September, 2010. Within 14 months of the project start, we built the technology platform and rolled it out. So far 250 million *Aadhar* numbers have been issued. As of now around 300 million have been enrolled in the system across the country and the target is 400 million by sometime in 2013 and about 600 million by sometime in 2014. By 2014, one out of two Indians will have an *Aadhar* number and over time, everyone will get a *Aadhar* number.

On October 20th 2012 we marked the 2nd anniversary of *Aadhar* in Duda, Rajasthan. This was to launch services as well as give the 21st crore *Aadhar* number to a resident of Rajasthan. Now 2-3 months later, we have already hit 28 crore and 280 million *Aadhars* have been generated.

We also have an online portal. You can go to our website www.uid.gov.in which will give you the data as of this morning. You can also see the distribution by state. In a state, you can go down and look at distribution by district. Basically you are choosing what is called big anonymised data to provide real time analytic source where we have all enrolments.

If you see the next couple of slides you will see the kind of enrolment centres in Andhra Pradesh, in Maharashtra and in Jharkhand. Today's *Dainik Bhaskar* carries news that there are long queues for enrolment in Jaipur. The scheme is very popular as a large number of people don't have any proof of ID. In many states a large percentage of the births are not registered and people do not have birth certificates/

school certificates. For such people, procuring an identity is very empowering. So there is a huge demand for this ID across the country.

The in-built authentication called an open platform or a common platform provides the facility to verify identities online which can be used for any government programme. Whether it's a financial transaction or a health transaction whether it's a food or kerosene transaction, one can conduct authentication online using the system. That ensures that only the genuine persons avail of that benefit.

Now the other important thing we offer is electronic KYC. KYC stands for "Know Your Customer." For example, the Reserve Bank of India has approved *Aadhar* in compliance of KYC norms for opening bank accounts. Data, such as, the address and identity details is sent from our computer to the computer system of the bank.

This KYC facility is today also used for mobile connections, insurance policies, stock market transactions, LPG connections, in train travel and many government services, etc. *Aadhar* is being used by more and more agencies for proof of identity and address. This ability to provide service to everyone in one go is very important strategically and can create quick adoption of many new capabilities. The KYC facility of *Aadhar*, therefore, promotes inclusion and reduces transactional costs.

Further, *Aadhar* provides the facility to make direct monetary benefit transfer into the bank account of beneficiaries. For instance, once the unique *Aadhar* number is linked to the bank account, pensions can be directly credited into the beneficiaries' account by giving this number. The ability of *Aadhar* as payment address is something that we use in the direct cash (direct benefit) transfer that the government has just rolled out.

So in fact if you look at the direct benefit transfer, *Aadhar* has five different roles and it is important to spend some time on understanding these.

The first role of *Aadhar* is on account of its unique number that removes ghosts and duplicates from the data base which is a huge source of leakages. Suppose there is a list of beneficiaries and often such lists have been found with duplicates or people who don't exist. So what we are doing now is that the government is working on many schemes and feeding the *Aadhar* number into that scheme. For example, in Rajasthan in three districts – Ajmer, Alwar and Udaipur where about 14 out of 34 schemes the *Aadhar* number has been fed in all the beneficiary lists and is being used to scrub the data base of duplicates and that itself provides savings and avoids fraud and wastage of money.

The second role is that of using the number as an address when the money is sent to the number. So the money is not sent to the bank account. Somewhere the *Aadhar* payment bridges the number which becomes the bank account. This ensures that there is no fraud because first you make sure that it is a real person then you send the money to number of real person.

The third role is that *Aadhar* is acceptable as KYC which means that once you have an *Aadhar* number, it is much easier to open a bank account. Anyone who needs a bank account for the purpose of cash transfer, can use this KYC.

The fourth important role is that it addresses the imperative need of the beneficiary to withdraw money conveniently from his bank account. For that we have introduced a micro ATM which is essentially a mobile phone enabled device which can be given to any business correspondent (BC) in any part of country and that is connected to the mobile network. The customer of any bank can go to any BC and withdraw money. And that is really the heart of the benefit transfer system because one part of the benefit transfer system is putting the money into the account, the other part is taking the money out of the account. And because these BCs are online, they are all on the same network.

This is a very important aspect of empowerment through *Aadhar* because one of the problems with our public delivery systems is that they don't give choices to the customers or to the beneficiaries to go somewhere else if they get bad services from their suppliers. For example, if you look at the Public Distribution System (PDS) if there are 2000 beneficiaries of PDS in a particular locality, there will be four PDS shops and each PDS shop is assigned to 500 people or 500 families which means those 500 families can only go to that PDS shop. If the shop is closed or the shop does not have the required material, one cannot do anything, he cannot go anywhere else. Once you create this interoperability or portability then the customer can go to any BC to withdraw his money. So if one particular BC is giving bad service, he will just lose his customer and people will go to somebody else.

The way it works is that if I am a customer, and I get Rs1000 as pension, the same goes electronically into my bank account and the bank will send a text message to my mobile phone saying that pension has been credited. And then I walk to a neighbourhood BC who could be an *Aanganwadi* worker, a *Panchayat* office, or a Grocery shop, it doesn't really matter, puts my finger on the system. The system confirms that I am the same person. Then if I want to withdraw Rs300 rupees from my bank account, BC will give Rs300 to me and on the computer system my account will get debited Rs300 and the BC's account will get credited Rs300 to replace the money which he gave. It is an online reconciliation system. Also I can go to BC of another bank and withdraw my money which means that every BC on the network is interoperable. So if we have 10000 BCs, they are interoperable, if you have 1 million BCs, even then there is interoperability. The same principle may apply for a PDS system. So the fact that you create what is called an entitlement portability, it goes a long way to reduce corruption because now the beneficiary has choice.

And finally the fifth benefit of this system is that you have end-to-end traceability of a transaction. Right from the point money is put into an account with *Aadhar* number to the point that the person withdraws the money with his *Aadhar* number, there is traceability at every level and that too in real time. Fundamentally you can create a

transparent architecture which allows you to do this cash transfer. This can be used for many other applications.

The system can be viewed as a pipe where at one end the government puts money into an *Aadhar* number and at the other end the beneficiary associated with the *Aadhar* number withdraws it from his bank account. Everything else is a black box.

So today if we have something like 250000 bank branches and post offices and may be 100000 ATM's and about 500000 point of sale (POS) machines, tomorrow once we have these micro ATMs and we have recommended that there should be one million of them, then there would be so many more locations for people to go and withdraw money and ultimately all this will be possible through the mobile phone. So once people start using a mobile phone you will witness digitisation of the payment system over the next few years which will make it convenient for people to access, transfer, withdraw and pay money.

We are making payments under the National Rural Employment Guarantee Act (NREGA) through a micro ATM in Jharkhand where the beneficiary puts his thumb on a small machine that is mobile phone based, which authenticates his ID and he gets paid.

The next slide shows a PDS shop in East Godawari, Andhra Pradesh, where we are doing a project using *Aadhar* for authentication. You can see a lady putting her finger on the machine, authentication process and then receiving quota of rice for the day or for that month.

The next slide is of Tripura where old age pension is being similarly withdrawn conveniently.

Fundamentally I think *Aadhar* solves a number of problems. First, for many people it is a first ID which is on the cloud and is a national ID which means, one can enrol in Bihar and it will work in Thiruvananthapuram. The fact that it gives national mobility is very important.

Because of its acceptance as far as KYC is concerned, it becomes an instant gateway to services. Opening bank accounts, getting mobile connections, getting insurance policies, getting state government benefits, applying for a passport, etc. reduces costs and barriers for people.

Then you also make sure that the money or whatever the benefit goes to the intended person because the person withdraws the money with authentication. For example in the recently launched programme *Annashree* in Delhi which gives a supplement of Rs600 for food to people on the BPL list, the money goes to the eldest lady of the house and only she can withdraw the money. So that's also empowering because you can make sure that it goes only to, say, the woman of the house.

And finally it gives entitlement portability. Once you put it on this cloud, then you can go to any BC to withdraw your money, go to any PDS shop to withdraw food and so on. Portability is the heart of empowerment because once you give portability, once the beneficiary can go anywhere to withdraw, then the bargaining power shifts from the supplier to the beneficiary. There are no more monopolies and automatically you get much better services that reduce retail corruption at the point of service. But the cash transfer is just one of many applications that will come on this platform in the coming future. And fundamentally it is a tool of massive social inclusion, it is a tool for making government expenditure more efficient and more effective and it is a platform on which a wide variety of services can be provided to make life better for everybody.