Is India capable to trigger the rise of Fourth Industrial Revolution?

The world we live today is deeply connected and wired in more than one way. Impact of technology is felt across both corporations and individuals in the same way. Economic development and social upliftment of citizens globally is underpinned by the rapid advancement of digitization. The First Industrial Revolution witnessed the use of machines, water and steam, which lead to first ever industrial production. The Second used electric power to create mass production. This phase also lead to standardisation, brand creation and mass consumption. The Third used electronics and information technology to automate production.

Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited.

According to global digital snapshot by We are Social and Hootsuite, the world around us is actively connected and wired into the digital world. 50% of the world is connected to the internet, and is now well and truly interacting and transacting through digital channels. This is surely the age of digitisation, where the world is now connected instantly.


We believe that India as a country with over 1.3 billion people population is on the cusp of fourth industrial revolution. Like the rest of the world, Indians are also advancing in a digitally connecting world, but there is something else Indian government is leapfrogging well above others through the roll out of the National Biometric Identity program.

The Unique Identity Authority of India (UIDAI), a federal government of India undertaking, has taken up ginormous task of creating unique identity to each and every one of its citizens to ensure that they spearhead the next global phenomenon of industrial revolution, at all the levels of economic hierarchy in the country. This very unique platform brings together the government (both federal and state), citizens of India and the corporate India on a single biggest project.

Typically an individual identity is defined in terms of demographic attributes namely name, gender, age and address. But demographic data alone cannot guarantee uniqueness. Unique identity is possible by linking demographic attributes with bio-metric attributes like fingerprint and iris patterns of the individual.

With recent advancement in technology, it is now possible to create a digital unique identity for an individual in a large population using bio-metric attributes (fingerprint and iris), which can be verified online.

Each unique identity can be assigned multiple identity tokens of various kinds:
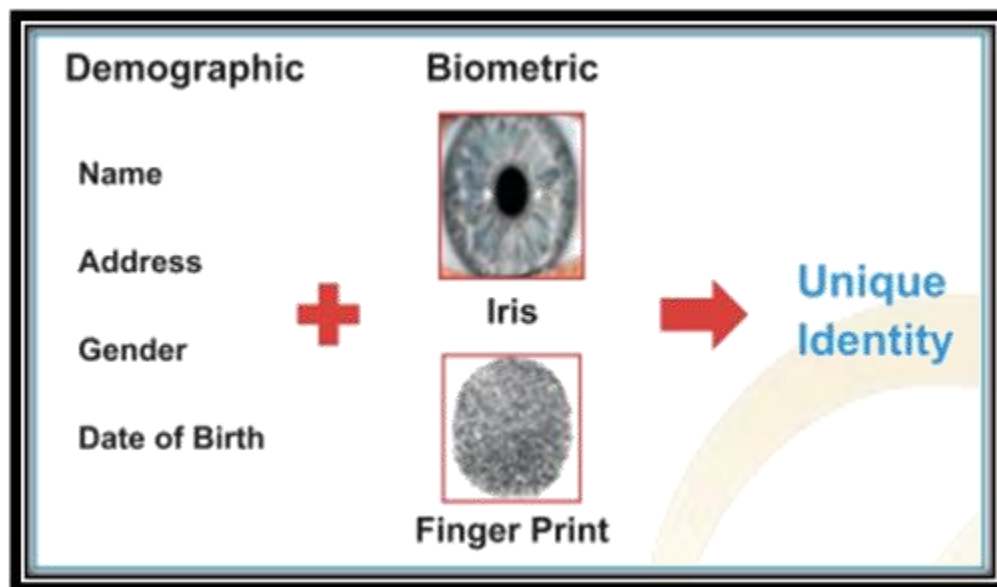
Source: UIDAI

- **What the user knows -** PIN,
- **What the user has –** mobile/OTP (One time Password),
- **Who the user is –** fingerprint, iris

which can be used appropriately for authentication, as per the business need of service rendered.

Creation and usage of a national unique identity, which is digital and verifiable online, can address the current challenges faced in identity establishment by service agencies.

Following are the key benefits:

- Highly portable (works anywhere in India) identity and easy to verify online.
- It helps the Removal of duplicate and fake identities and helps roll out of social welfare effectively.
- Higher scalability of services with online authentication, allowing the service agencies to use multiple channels for service delivery.
- Accountability around efficient service delivery process and reduced cost of identity establishment.
- Reduces the need submit physical copies of identity documents and thereby risk of identity theft associated with physical documents usage.

So far more than 530 welfare programs across 60 plus different ministries are now meant to be linked to Aadhaar. In February 2017, around 335 million citizens benefited from various direct benefits by Indian government, and about 168 million of them received those benefits into Aadhaar linked bank accounts.

More than 85% of Indian population is now on Aadhaar platform, and this is now giving rise to a raft of developments and schemes to the poor. All of it possible without any significant leakage of subsidies into wrong hands.

The Map shows the total Aadhaar platform registrations across the country:
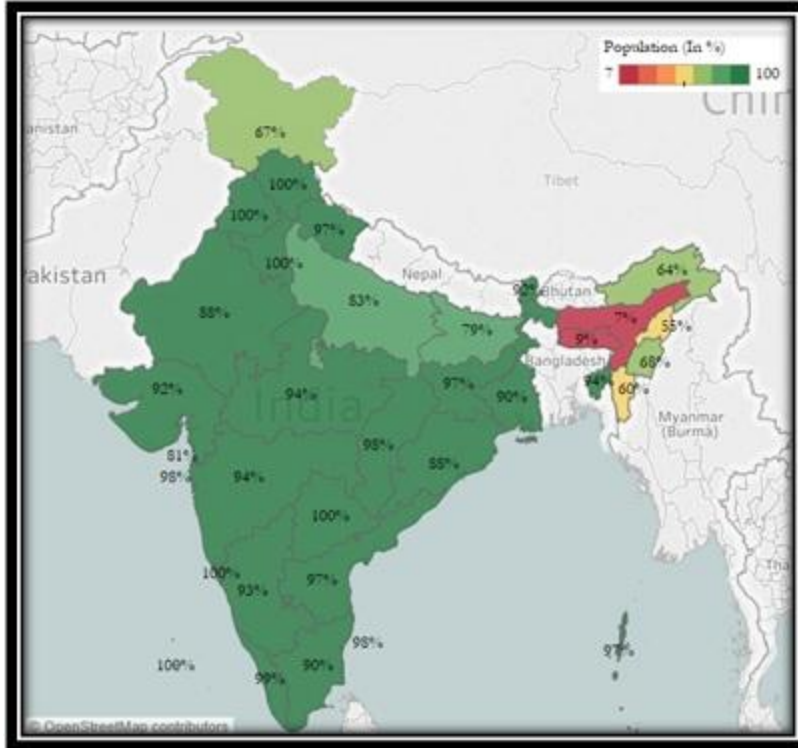
Source: UIDAI

The services that Aadhaar is now linked to:

Schemes	Aadhaar requirement	Last date for Aadhaar enrolment (for those who do not have Aadhaar)
Awards for technology innovation in petrochemicals and downstream plastics processing industry	To receive the benefit of cash award	31 March 2017
Legal representation of the Bhopal Gas victims and settlement of claims	To receive the benefit of cash compensation	30 May 2017
Pradhan Mantri Ujjwala Yojana (PMUY)	For women below poverty line to get liquified petroleum gas connection without upfront charges	30 April 2017
Central Sector Scheme for Implementation of Persons with Disability Act, 1995 (SIPDA)	To receive cash benefits for post placement support	30 May 2017
Central Sector Scholarship Schemes	To get cash benefits and various allowances	30 May 2017
Centrally Sponsored Scheme of Adult Education and Skill Development, commonly known as Saakshar Bharat	To receive honorarium, teaching and learning materials	31 March 2018
National Health Mission	To receive remuneration by contractual staff	31 March 2017
Sarva Shiksha Abhiyan, a centrally sponsored scheme	To receive salary or honorarium, training and training material	30 May 2017
Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (hereinafter referred to as the DAY-NRLM)	To receive remuneration by members of a self help group	30 September 2017
Swadhar Greh Scheme for women needing institutional support for rehabilitation	To provide food, clothing, medicines, etc., and for reimbursement of fees for vocational training	30 September 2017
Support to Training and Employment Programme (STEP) Scheme	To avail of financial assistance and training by women for self-employment or business	30 June 2017
Integrated Child Development Scheme	To receive remuneration for the services rendered by Aanganwadi workers and helpers	31 March 2017
Mid-day meal scheme	To receive benefits under the scheme	30 June 2017
Income tax return and for applying and retaining permanent account number (PAN)	Aadhaar to be quoted while applying for a PAN and while filing income-tax returns.	From 1 July, Aadhaar or Aadhaar enrollment number mandatory for filing tax returns or applying for PAN
Aadhaar-based e-KYC (know your customer) for existing and new mobile phones users	To continue availing services after verification of existing and new users	2 June 2018
Driving licences and vehicle registration	To get driving licence issued and to register vehicles	After Motor Vehicles (Amendment) Bill, 2016 is enacted

Till the Aadhaar number is generated, the enrolment number will mostly be sufficient.

Source: Mint research

According to Unique Identification Authority of India (UIDAI), Stakeholder benefits enabled by Aadhaar are as follows:

Government (State services)

- Better reach and targeting by ensuring inclusion of those without proper ID proofs.
- Remove duplicates and reduce leakages by linking beneficiary record with Aadhaar, and using Aadhaar authentication at the point of delivery. Able to utilize scarce development funds more effectively.
- Reduce cost of service delivery by using direct payment to Aadhaar linked bank account of beneficiaries.
- Enhance accountability and traceability of service delivery to actual beneficiaries.
- Better engagement with residents through self service applications.

- Facilitate direct subsidy transfer to beneficiary accounts using Aadhaar linked bank accounts.
- Aadhaar number and its authentication can become an enabler for providing information to residents on status of service delivery

Industry/Enterprises (Telcos, Banks, Insurance, Oil & Gas companies)

- Lower customer acquisition cost and better compliance using Aadhaar for KYC.
- Reduced transaction fraud by enhancing customer verification using Aadhaar authentication.
- Prevent subsidy leakages and enable direct subsidy transfers using Aadhaar and Aadhaar linked bank accounts.
- Easier to implement single customer view across services using Aadhaar number as linkage.

Individuals/General Public of India

- Portable and universal identity, able to authenticate anytime, anywhere.
- Receive full eligible welfare payments directly from the government without any delay.
- Able to conduct financial transactions from any micro ATM near their home using Aadhaar linked bank accounts, allowing residents to save travel time and money.
- Eliminate fraud related to rent-seeking by middleman, and benefits being siphoned off by an intermediate impostor.

The Three Foundation Pillars of New resurgent Digital India

Aadhaar combined with a **bank account** and a **mobile phone** can act as three foundation pillars, which can be leveraged by service agencies (public and private alike) to open up new developmental and growth avenues for residents.

Source: UIDAI

With the rise of digital technologies and platforms like Aadhaar, we believe that India is now going to be one of those few countries in the world, which is capable to collect the impact of government policy for social development. India makes up more than 1/7th of the total world population today, and more than 85% of this population is now identified on a single platform.

This will now lead this country:

- to move from data poor to data rich
- to move from financially excluded to financially inclusive society
- to move from only urban led developed society to a more comprehensive, overall developed society
- to move from ineffective governance to effective governance at grass-root levels.

There are questions certainly being asked on privacy, cyber security, impact of big data and governments access personal data of its citizens. Inspite of various other fears that might stem from a digital economy at this current point of time this exercise from indian government has certainly won the hearts of the poor, created fear in the mind of the corrupt, ensured a financially inclusive society, empowered and educated the poor on government policy better, cut down red tape and bureaucracy on a significant scale. There will always be winner s and losers on any major decisions taken by the Governments, but this decision to create Aadhaar certainly seem to have created long term winners by enabling a billion people on digitally interactive platform.

With a highly robust and regulated ecosystem driven by an innovative Fintech and Internet of Things (IoT) environment, India is setting the standard for the rest of the world to follow. Aadhaar serves as a foundation to build a highly scalable infrastructure to connect the government, business and society in a more integral manner.

In conclusion, India is well positioned to trigger the start of the Fourth Industrial revolution with one of the youngest work forces in the world, second largest user of internet on mobile devices , second largest English speaking population and a large KYC and Authentication platform at its core to create a viable digital ecosystem.