



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

Year:

2013

Status:

Laureate

Organization Name:

Unique Identification Authority of India

Organization URL:

www.uidai.gov.in

Project Name:

Aadhaar

Category:

Economic Development

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

More than 1.2 billion people live in India and around 400 million cannot prove their identity. These people find it difficult to improve their economic situation as they are unable to apply for welfare benefits, access education, open a bank account or seek higher-level employment. Further, this identification challenge means as much as 40% of the government's annual welfare spending of US\$40 billion is misdirected and does not reach its intended beneficiaries. To solve this problem, the Indian government's Unique Identification Authority of India (UIDAI) has embarked on an innovative program known as Aadhaar (foundation) that allows residents to prove their identity through a unique identity number (UID) tied to their biometrics. The UID will enable residents to take transformative steps

such as opening bank accounts, and allow governments to more effectively deliver public services to help ensure benefits go to the right recipients. These are major steps in promoting India's inclusive growth. By 2014, UIDAI's goal is to assign a UID to half the population (600 million people). During this timeframe, UIDAI must record 600 million names and addresses, photograph 600 million people, scan 1.2 billion irises and collect 6 billion sets of fingerprints. Once this information is captured, the system compares each set of biometric data to existing records to ensure the UID is assigned to a unique individual, a process that takes a matter of minutes. In the 24 months since the program began, more than 235 million people have been enrolled. UIDAI has also developed innovative solutions to help residents enroll, including working with rural communities to assist people who cannot read or write, using manual processes to overcome technology challenges, and using multiple biometric methods to enroll people who have had their fingerprints eroded due to physical labour.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

The Aadhaar program went live on 30 September 2010. The core enrollment process has remained consistent, and involves the following steps: Residents travel to an enrollment centre, complete a form and present current identification documents. If they do not have identification, community leaders known as introducers can vouch for a person's identity. Residents have their biometric data recorded: photographs, iris scans and fingerprints. The data is then uploaded to a central repository. This data is sent to UIDAI's Biometric Solutions Provider for de-duplication, where the system's engine initiates an algorithm to check whether the biometric data already exists on the database. If no records exist, a unique Aadhaar number is sent to the resident by mail. This enrollment process has been supplemented by ongoing innovations, including: Implementing a biometric search and de-duplication process that enables up to a million enrolments daily, matching 200 trillion pieces of data every 24 hours. Integrating UID, the National Payments and registered cellphone numbers, enabling payments to be made to UID-linked banked accounts through mobile phones and one-time passwords. Distributing government benefits via UID numbers. Implementing easy-to-use front-end technology to help train operators collecting data from residents. This is an important step in India where many people have limited access to technology and innovation. Using cutting-edge technology to identify and manage fraud if and when it occurs. Working with banks to set up a network of micro-ATMs equipped with fingerprint readers to distribute cash in rural areas. This eliminates the need to have bricks-and-mortar bank branches, and for residents to travel long distances to access funds. Using vendor-agnostic and open source technology to underpin Aadhaar's architecture. This means components and service vendors can be replaced if necessary.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

In December 2012, UIDAI achieved a major milestone with the enrollment of over 235 million residents marking the completion of Phase One. Phase Two of the program aims to enroll 400 million additional residents over the next two years. This focus on scale is crucial, as achieving critical mass will underpin Aadhaar's success. As UIDAI enrolls more people, benefits in terms of welfare, health and employment become more widespread, and the Indian government can target welfare payments more accurately. Currently, the government is running pilot programs that use Aadhaar to promote inclusive economic development. Prior to Aadhaar, only around 20% of Indian residents had bank accounts because they could not prove their identity. This presents a major stumbling block to people who want to control their finances and improve their economic and social situation. There have already been successful trials of residents using their UID number to open bank accounts, with nearly 88% of people enrolled in Aadhaar opening an Aadhaar-enabled bank account. A further pilot has involved delivering subsidised liquefied petroleum gas cylinders (LPG). Since January 2012, 50,000 deliveries have been successfully made to the right recipients using Aadhaar authentication. And from 1 January 2013, the government is rolling out the Direct Cash Transfer scheme through Aadhaar, which will transfer funds for scholarships, pensions and wages, amongst other benefits, directly to the right recipients. In a country where "leakage" of benefits runs as high as 80% of earmarked funds, this is a significant step towards ensuring that benefits reach the right recipients. These pilot services represent the ultimate aim of UIDAI: harnessing the power of the Aadhaar UID number to give residents access to services that help transform their lives, and allow them to benefit from India's ongoing economic development.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

Aadhaar dramatically changes the lives of many Indians. Mary Karkatia lives in Guragon, a suburb of New Delhi. Without a birth certificate, passport, voter ID card or any other government document, she is unable to open a bank account. This makes it difficult for her to manage the Rs 2 lakh (US\$1,800) in savings she has earned from her employer. Under Aadhaar, Mary will be able to visit a regional enrollment station, register for an Aadhaar number and open a basic bank account. Mangal Bedia lives in Dohakatu Village in Ramgarh district. In the past, Mr Bedia had to travel 15 kilometres on a packed bus to withdraw his pension from a bank. However, by enrolling in Aadhaar, he can now access his

pension via a handheld ATM in his own village by entering his Aadhaar number and providing an imprint of his thumb. "It's all very comfortable now," Mr Bedia said. "I do not have to travel in crowded buses to go to withdraw my money." Under this aspect of Aadhaar, banking representatives in villages are being equipped with micro ATMs and cash. The Aadhaar-enabled account holders can then use their thumbprints to authenticate their identity and account details. This revolutionary use of technology gives Indian residents access to their funds where and when they need them. But the benefits go even further. By requiring service recipients to prove their identity, the Indian government can reduce the level of misdirected welfare spending and fraud, and help ensure its services assist more people to move out of poverty. In addition, using the Aadhaar number will give all governments a more accurate demographic picture of communities, allowing officials to allocate spending, resources and personnel where they are needed most.

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

Aadhaar will transform the way residents are supported and included in their communities. With a target of over one billion people, the scale of the Aadhaar program is unprecedented. However, the challenges it is trying to address are common to many countries. This makes the Aadhaar program a notable advancement that can be adopted by governments and organisations around the world. The program uses biometrics to resolve identity issues. This solution does not rely on documents or ID cards, but instead uses iris scans and fingerprints. UIDAI is also combining this cutting-edge technology with long-established cultural channels. For example, introducers will vouch for community members who want to join Aadhaar but cannot prove their identity. In this way technology is being used to increase the economic opportunities of India's most disadvantaged residents. UIDAI has also made the Aadhaar scheme voluntary, as it has recognised that compulsory approaches by other organisations have been unsuccessful in the past. UIDAI has driven uptake of Aadhaar by building a platform of trust and connecting with local communities. In addition, UIDAI's implementation of Aadhaar makes the style of program highly accessible. UIDAI is using a substantial amount of open-source software as part of its technology platform. This means software solutions can be developed at relatively low cost, using tools that are available to virtually anyone. UIDAI has spawned a vibrant community of software and application developers that create solutions and make them publicly available over the Internet. The open nature of the platform also means that businesses can create inventive applications. For example, banks and financial institutions can offer basic bank accounts to Aadhaar holders



at low cost. This creates a pipeline of future customers who are working towards higher incomes and an improved quality of life.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

Aadhaar is a groundbreaking, IT-based program that will drive a fresh wave of inclusive economic development through India. It will forge the foundation (the Aadhaar) to allow some of India's most marginalised residents to fully engage with their society. They will be able to easily prove who they are, unlocking the ability to open bank accounts and manage their finances; to access education and improve their employment prospects; and to receive the social services they need, and are eligible for, so they can improve their lives. It will also give businesses, such as banks and financial institutions, a new pipeline of customers at very low cost, and allows many other companies to generate innovative services that harness the power of the Aadhaar ID number. Aadhaar is a once-in-a-generation program that has motivated talented expatriates to return home and work on the reforms. For example, the UIDAI is headed by Infosys co-founder and ex-chairman Nandan Nilekani. "This is the stuff that excites me, the stuff that I know can make a difference to millions of people," Mr Nilekani has said. This "stuff," the Aadhaar vision, is a new framework for public-service delivery, one that harnesses the benefits of technology to deliver economic benefits to all residents. Aadhaar will give every Indian resident the opportunity to seamlessly receive the services they need, while removing the scope for duplication, forgery, or funds going to unintended beneficiaries. This will also help the Indian government spend its welfare budgets more effectively. Aadhaar is a crucial step in promoting social inclusion in India. It is using technology so that all residents, even the most disadvantaged, have the opportunity to benefit from India's tremendous growth.