



2013 Grand Challenges

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Out of the Shadows: A Universal Biometric ID for Safety and Dignity

Challenge Statement:

Achieving biometric recognition of every individual in poverty and currently without identification to improve resource allocation, disaster accountability, corruption reduction, remittance management, internal migration, and full participation in the life of the nation.

Problem (and why it's solvable):

As of 2007 more than half of the world lives in cities. In 2005 approximately 1 out of every three of those city dwellers lived in a slum. The combination of rural poverty and accelerating migration to informal urban settlements has led to a growing population of invisible urban poor who have no verifiable identification.

That population, unable to claim social support, wanting to work, and intending to better their lot, is hamstrung in their ambition by their very invisibility. Because they have no official existence, they cannot reliably receive food distributions or medical care intended for the poor. They cannot open a bank account or purchase a cell-phone contract or register an address. They are at the mercy of middlemen for remittance payments, of corrupt employers for cash wage distributions, and of criminal gangs for trafficking, recruitment, and slavery.

Bribery for subsidized food and fuel becomes common, ghost workers inflate government contacts, and economies stagnate through inefficiencies and mistrust. Women, in particular, are frequently unable to establish an identity and are subject to abuse with no official record of their existence.

A universally acceptable identification method, based on biometric measurements of fingerprints and irises, would eliminate the majority of these shortcomings. The ability to prove, within a few seconds, a personal identity, is technically achievable, socially responsible, and deeply desired by many adult urban poor. It has been shown in limited trials to be one of the most effective methods available for alleviating poverty, reducing corruption, and improving governmental efficiency.

Barriers:

There is no identification method generally available to the poor that can provide a unique and accessible identity for every person who has no other ID.

When there is no universally accepted identification, leaving a village means that family and clan ties are lost, trust and stability are lost, and daily transactions become cash-based, informal, insecure, and subject to graft, siphoning, and theft.

Advancement within a new economic environment is hampered by the consequent inability to accumulate a margin of safety through savings accounts, postal addresses, and cell phones, and so the cycle of poverty in such marginalized populations continues.

Risks and Concerns:

There are multiple problems that immediately present themselves for consideration. From one perspective, the potential for abuse seems obvious and that is unquestionably a genuine concern, but that abuse potential is dominantly related to issues of civil liberties and personal privacy. In response it can be argued that the intended population is at far greater risk of violation and manipulation by the fact of their invisibility and the State's consequent lack of responsibility for their care. They don't exist, so they can be exploited and abused freely and without consequence and the State has very little legal responsibility (ethical issues are a different question). As one citizen of a very poor country said when interviewed for this paper "What civil liberties are found in a sleeping room full of day laborers making a dollar a day with no running water, no toilet, no electricity, and no rule of law? What personal privacy is found among the anonymous girls filling the sweatshops and whorehouses of Cambodia?"

The risks of information abuse and privacy violations are real, but can be effectively addressed on several levels. The benefits appear to outweigh the concerns, though further study is warranted, and a careful design that mitigates such risks is appropriate.

As was said by Ram Sevak Sharma, the director-general of Aadhaar (the biometric identity program in India): "One cannot improve human beings, but one can certainly improve systems. And the same flawed human beings with a better system will be able to produce better results."

In 2002 an ambitious survey of the global poor led to insights, including an expressed desire for recognition both personally and on maps, that in turn led to changes in policy and legislation. Now, a decade later, another such survey, in concert with this Grand Challenge, could help reveal the priorities considered by the poor to be most critical in improving their lives now that they are seen to exist and to have a place in the world. Those answers could lead, from this Grand Challenge for personal recognition, to the next level of Grand Challenges in Development.

Challenge Mechanism:

A number of countries have recognized this need for personal recognition and implemented biometric IDs to greater and lesser degrees. The most ambitious current effort is India, which intends to have its program, Aadhaar, biometrically register 600 million citizens over age 15 by 2014. Another is Bolivia, which successfully used a biometric ID for their most recent election, monitored by the Carter Center. Experience is growing and the benefits are accumulating.

Using a Grand Challenge to expand such early efforts to encompass all urban poor would, in a single effort, encourage global recognition of those least visible and most exploited.

Focus Areas:

- How to create, adapt, and scale up low-cost techniques to implement a unique biometric identity system for the urban poor?

- What approaches (operational, social, technical, cultural, religious, behavioral, bureaucratic) can be developed to implement a biometric identity system acceptable across all likely transactions, and how will cost-effectiveness be measured?

Defining the Critical Barriers:

Listed below is a cross section of the obstacles that limit the design and implementation of a biometric identity system for the urban poor. The goal of the list is to assure that all major barriers are identified, and then to select a few key obstacles that can be addressed through this Grand Challenge. Those, in turn, will lead to the largest possible positive impacts in the creation of affordable and acceptable biometric identity systems within the next five years.

• Technologies & Training

- Access to cost-effective technologies and approaches for creating a secure database of unique and accessible IDs.
- Access to cost-effective technologies and processes for the rapid collecting, efficient storing, and rapid retrieval of biometric data and match results.
- Methods for scaling up the adoption of cost-effective technologies and approaches that have been successful in countries implementing universal biometric IDs (India, Pakistan, Malaysia, Bolivia, South Africa)
- Field training for optimal techniques in biometric collection, specifically encouraging women as collectors.
- Development, distribution, and implementation of Point-of-Sale biometric registers for cash-less transactions.
- Development and implementation of public aid distribution center biometric readers for food, water, fuel, and medical care subsidies

• Technical Capacity & Innovation

- Technical capacity of experts to carry out planning and implementation
- Business models and markets for cash-less financial transactions
- Business models and markets for banking and service economy support of direct cash-less transactions
- Concern: Lack of capacity of local stakeholders to prepare the technology necessary for cash-less transactions

• Collaborative Incentives

- *Positive:* Create incentives for stakeholders to shift to non-cash biometric registers and direct payments. Graft and embezzlement opportunities will thereby be significantly reduced, and middlemen eliminated, reducing wage losses.
- *Negative:* Lack of coordination and understanding of universal biometric IDs and the value they provide in terms of safe, secure, unique, traceable transactions.
- *Negative:* Lack of a systems approach in biometric ID design may generate short-term positive impacts that complicate longer term solutions by overlooking subtle dependencies, social dynamics, and cultural mores.

• Social & Economic Enabling Environment

- Protection of civil liberties and personal privacy by collecting the minimum amount of information needed to establish an identity (name, date of birth, gender, and address - matched to fingerprints and iris scan).
- Focus on those who have no other form of identification.
- Conduct a survey of the poor, as the ID collection proceeds, to help gain insight into other issues worth addressing as Grand Challenges in Development.

- Encourage an acceptance of the urban poor as full members of society, worthy of protection and inclusion, seeing a biometric ID for the poor as a necessary social investment.

Prospective Partners:

The possible partners for such a Challenge include those States already successful in biometric identification for the most vulnerable, plus those who have wished to implement biometric IDs but had been concerned about abuse, plus those who care about the numbers revealed for care and responsibility, plus those with the social and technical skills to conduct the registration, design the multiple levels of safety and security, and create the tools needed for those who will use their ID for purchases and goods distribution.

Equally important is the full presence of those supposed to benefit from the Challenge – the very poor with no other form of ID, to ensure the design and implementation make sense, and that the Challenge maximizes the possible good to be derived while minimizing harm, abuse, and risk.

Also needed are bioethicists who can objectively weigh methods, processes, arguments, and enthusiasms and ensure that the goal, and the methods to achieve the goal, are assessed carefully and designed properly with the correct emphasis on those in need of help.

Also on the list should be design scientists – people who understand how to design every step of a process for multiple benefits, zero waste, and minimal harm.

There should be, on an oversight committee, representatives who oppose the effort, and representatives who have lived within the developing world, working directly with the poor, but from a position of education, with a broader view and an awareness of potential.

Examples might include:

- The government of India
- The government of Malaysia
- The government of Bolivia
- The government of Mexico
- The World Bank
- UN-WHO
- UN-HCR
- UN-WFP
- UN-HABITAT
- UN Global Pulse (Office of the Secretary-General)
- CDC
- USAID
- DFID
- DFID (UK)
- GTZ (Germany)
- AUSAID (Australia)
- Grameen (Bangladesh)
- BRAC (Bangladesh and Afghanistan)
- Buckminster Fuller Institute
- Rocky Mountain Institute

- World Vision
- NetHope
- InSTEDD
- DataDyne
- Google
- IBM
- Cisco
- Visa
- Citigroup
- And a few specific individuals:
 - Vandana Shiva
 - Damien Keown
 - Karen Armstrong
 - Rita Colwell
 - Laurie Garrett
 - Robert Kaplan
 - Ashraf Ghani
 - Clare Lockhart
 - Thich Nhat Hanh
 - Parag Khanna
 - Mike Davis
 - Larry Brilliant
 - Lin Wells
 - Bill Joy
 - Ray Kurzweil
 - Peter Diamandis
 - Robert Neuwirth
 - Robert C. Solomon
 - Mark Kramer
 - Stephen Morse

Restating the Challenge:

Achieving biometric recognition of every individual in poverty and currently without identification to improve resource allocation, corruption reduction, remittance management, internal migration, and full participation in the life of the nation. //

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