

No more Mr and Mrs X

More than two billion people worldwide are disenfranchised from much of society because they are effectively faceless. The digital revolution will give them an identity, writes **Professor Michael Mainelli**

Hernando de Soto, the Peruvian economist renowned for his work on the informal economy and property rights, got it. “Without an integrated formal property system,” he said, “a modern market economy is inconceivable.” Property rights require the rule of law and registries of property owners. More pointedly, without personal identification a modern market economy is inconceivable, not least because without identification there are no holders of property rights.

Identity is not just physical: a DNA or retinal match. Nor is it merely about ownership of bank accounts or assets. Our identities are the ‘chains of our lifetime’, binding our pasts and futures with the present. For example, your school grades, driving record, tax payments, and health records are all part of a chain of behaviour entangled with your particular human body. Our identities encompass our relationships with other people and institutions. Our identities vary depending on who is identifying. The tax office probably has little interest in your driving record, but may

care enormously about the days you spent out of the country.

About 2.4 billion people worldwide lack official identification, about 1.5 billion of whom are over the age of 14. While they certainly know who they are, they are excluded from market economy property ownership, and, frequently, free movement, social protection, and empowerment. They cannot ‘prove’ their existence to the satisfaction of society’s registries. Lack of official identification increases remittance costs, corruption, and

crime. Insightfully, the United Nations has a target to provide legal identity to all, including birth registration, by 2030.

The price of missing identities

Over the past few years, banks have withdrawn from remittance markets in developing countries, citing too much difficulty and fines for not complying with developed world know-your-customer and anti-money-

laundering (KYC/AML) requirements. Perhaps contrarian banks should seek to excel at providing identity and payments in the harshest conditions of war-torn or lawless countries, but so far none have led.

At the other end of the spectrum, high-net-worth individuals (HNWI) in the developed world struggle too with the plethora of bureaucracy and paperwork involved in KYC/AML regulation. Onerous KYC/AML is an obstacle to trade, thus reducing the benefits of comparative advantage and specialization. Financial institutions waste time and money on KYC/AML for little avoidance of money laundering or fraud. Some institutions estimate losses post ‘sale’ at up to 40%, with customers refusing to put up with overly bureaucratic procedures and failing to proceed with previously agreed financial services.

Two inexorable trends increase the tensions in identity: globalization and population. In a globalized world that is populated by almost 10 billion people, transactional affordability is crucial to success. Sure, a few individuals can afford complex and costly identity schemes, but can developed world financial service providers ponderously insist on using slow and costly systems to exclude large markets full of future customers?

Blockchain to the rescue

Mutual distributed ledgers are open registers that allow groups of people to validate, record, and track transactions across a network of decentralized computer systems. Though such ledgers

THE DIGITAL RUBBER STAMP

Our firm, Z/Yen, has built a private system, IDchainZ. Typically there are three parties: the subject, an individual; the certifier, an organization notarizing documents; the inquisitor, an organization conducting KYC/AML checks on the subject. An identity certifier might be a government, an accounting firm, or a credit-referencing agency.

IDchainZ uses two distinct mutual distributed ledgers, a content ledger holding the individually encrypted documents, and a transaction ledger holding the encryption keys on a series of 'key rings'. The subject can give the certifier permission to put digitally-certified documents on their key rings. The subject can give copies of the keys to inquisitors. The system can restrict the number or the timing of inquisitor examinations, and records all inquisitions for the subject. The system meets such data protection standards as the 'right to be forgotten'

and location of data storage. The subject 'owns their own data' and serves as the conduit, when needed, for communication between inquisitors and between certifiers, in full control.

Consider the identity certifier as a 'co-stamper' of data on to a personal or corporate 'chain'. The owner of the chain can include what they like – pictures of the cat even. But if they wish to get other people to accept the data's validity, it needs co-stamping. A simple example might be that your accountancy firm needs to co-stamp the inclusion of your annual report on your corporate identity chain before other parties would normally accept it. Another example might be that you go to an identity certifier to encode your DNA, retinal scan, and photo, thus time-stamping your identity. Certifiers have no further access to the data. However, you can share the key to your identity chain with other people and organizations who will rely upon the fact that the data has been co-stamped by a trusted third party.

has been operating a universal national digital identity scheme using blockchains, and has extended it to non-nationals. Though not based on blockchains, since inception in 2009 the Unique Identification Authority of India has issued more than 1 billion identity numbers, which – so far – covers 85% of its population. Britain's GOV.UK Verify proposes a public services identity assurance programme using a network of trusted and vetted third party providers instead of relying on a centralized database.

What if you had a portable, secure, globally available store of personal data in a blockchain?

As de Soto had it, "the way law stays alive is by remaining in touch with social contracts pieced together among real people on the ground". At a time where access and control over one's own data is becoming increasingly sensitive, empowering individuals to store, update and manage access to their data seems rather obvious. Transaction costs will drive a 'many uses' approach to get the most out of an expensive process. Both high-net-worth customers and low-net-worth customers expect global identity, whether it is payments, credit, government records, health records, or academic qualifications. Their demands will get stronger as they realize what can be achieved, rather than what has historically been foisted upon them. They will bypass service providers with onerous identity rituals. 'Many uses' will in turn drive consolidation towards a few, competitive, global systems. Identity sovereignty is coming. ●

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are over two decades old, the poster child for mutual distributed ledgers is the blockchain ledger of bitcoin. What if you had a portable, secure, globally available store of personal data in a blockchain? You could have all of your health records or driving history available instantly to hand on to trusted third parties. You might hand over your health record to a new doctor or to obtain a life insurance quote, or your driving history at an airport counter for a car rental insurance discount. Your personal data store might also have your biometric data, thus giving you the ability to prove at any time you are who you say you are, and that the data contained in the blockchain is yours.

Governments are setting up innovative digital identity systems and authentication processes. Tellingly, since 2007 Estonia

